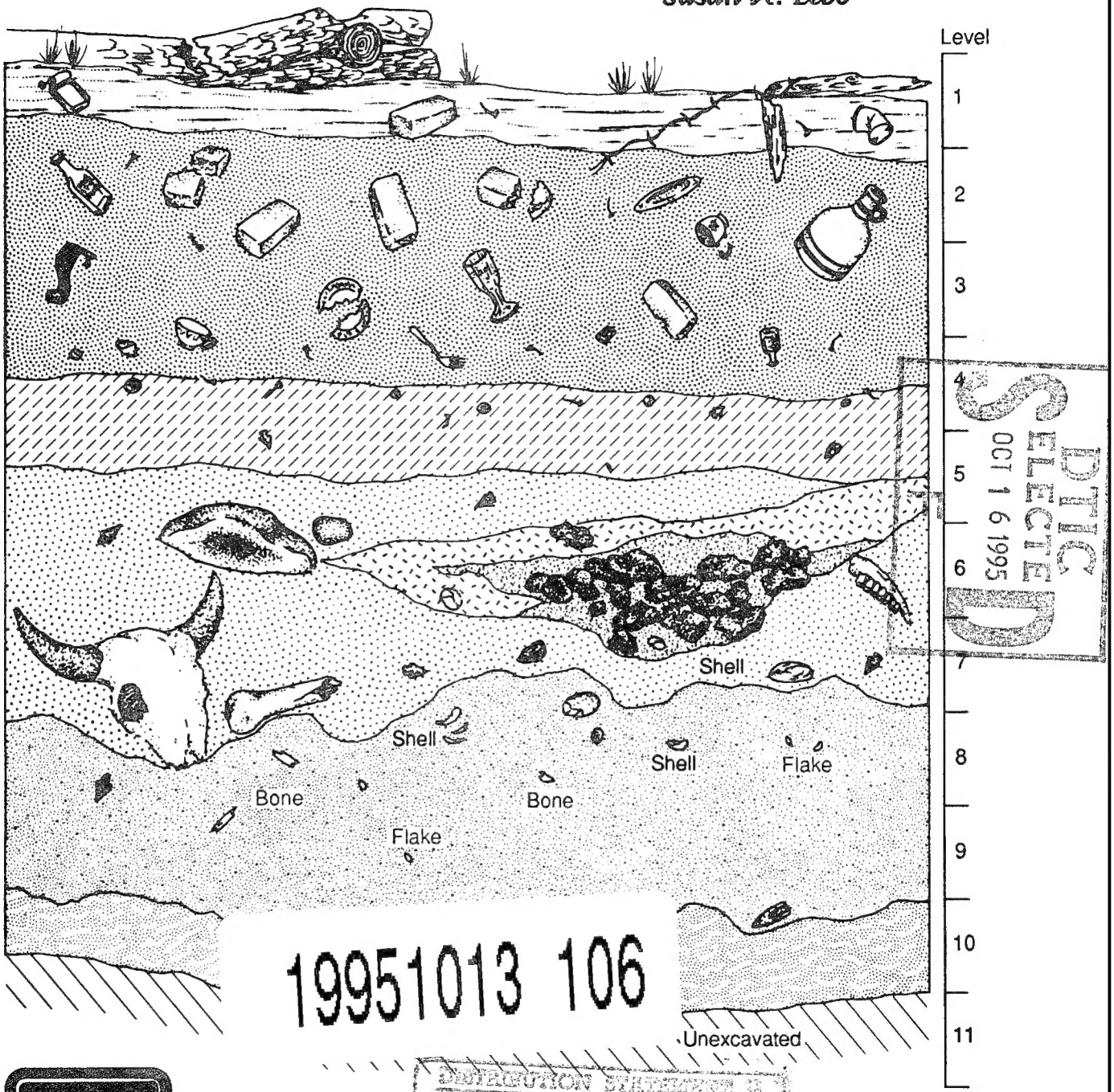
# ARCHAEOLOGY OF NINETEENTH AND EARLY TWENTIETH CENTURIES LIFEWAYS IN THE LEWISVILLE LAKE AREA, DENTON COUNTY, TEXAS

Edited by

Susan A. Lebo






U.S. Army Corps of Engineers
Fort Worth District

Institute of Applied Sciences
University of North Texas

# ARCHAEOLOGY OF NINETEENTH AND EARLY TWENTIETH CENTURIES LIFEWAYS IN THE LEWISVILLE LAKE AREA, DENTON COUNTY, TEXAS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Submitted in Partial Fulfillment of
Contract Number DACW63-86-C-0098
Fort Worth District, U.S. Army Corps of Engineers

May 1995

## ABSTRACT

This report describes the results of the historic excavations performed by the Institute of Applied Sciences at the Lewisville Lake project. This field work, conducted in 1988, consisted of excavation of five prehistoric and three historic sites determined eligible for nomination to the National Register of Historic Places. The prehistoric sites include possible Middle Archaic to Late Prehistoric II occupations spanning the past 5,000 years. New information was obtained pertaining to resource utilization, past environments, and adaptative strategies (see Ferring 1990). The historic sites are three farmsteads, 41DN401 (1870s/80s to 1940s/50s), 41DN404 (1870s to 1920s/30s), 41DN429 (1850s to 1950s), containing well-defined sheet-refuse deposits, and architectural and archaeological features. These sites are the best-preserved historic farmsteads in the Lewisville Lake project area.


## MANAGEMENT SUMMARY

This report describes the results of excavations at three historic sites (41DN401, 41DN404, and 41DN429) occupied between the 1850s and 1950s. Chapters 1 (Introduction) and 2 (Environmental Setting) provide an introductory overview of the project area and the work conducted to date. Chapter 3 summarizes the project research design, while Chapter 4 provides a discussion of the historic research design and methods. The historic background is given in Chapter 5. The site descriptions (Chapter 6) include a discussion of the previous investigations and the archival, architectural, and archaeological research at each historic site. The artifact data are inventoried in Appendix C, and the faunal data (Appendix A) are briefly summaried in the site descriptions. Chapter 7 provides an overview of the historic foodways for the Lewisville Lake area during the late nineteenth and early twentieth centuries. Chapter 8 reviews the research questions, the data collected, and provides an overview of the historic lifeways and archaeological database for the project area.

The historic data recovered during this project indicates that the area was occupied primarily by farmers, who were largely self-sufficient prior to the Civil War, and sharecroppers, tenants, and landholding cash-crop farmers after the Civil War. A number of small communities were located in the area, and major economic trends (e.g., railroads, cash-crop farming, the decline of small-scale farming in the twentieth century) that affected other parts of the U.S. and Texas, also impacted the project area. The lifeways of the area changed greatly between the early settlement in the 1840s and the construction of Lake Dallas, and later, Garza-Little Elm (Lewisville Lake). The number of historic farmsteads remaining when this project began, and within the project area, is small. The archaeological database did not indicate major sociocultural, ethnic, or economic variability between farmsteads although cultural and economic diversity occurred in the area.

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## ACKNOWLEDGMENTS

The authors would like to thank the many people who helped to accomplish the Lewisville Lake excavations. These people include the two crew chiefs George Brown and Bob Skiles. Crew members did an outstanding job conducting excavations and laboratory work; they are listed below:

Chris Brown
Marie Brown
Robert Cast
Cliff Dorsett
Steve Gaither
Clint Grebe
Tammie Green
Lilly Gholston
Brian Ham
Wayne Hedrick
Carin Horn
Steve Hunt
Kim Jindra
Carole Medlar
Bruce Mergele
Henri Migala
Elizabeth Mitchell
Evette Moorman
Laural Myers
Robert Perales
Kate Ray
Tracy Reid
Susan Riley
Eric Roberts
LeeAnna Schniebs
John Mark Sheppard
Alice Stewart
Betty Lee Stringer
Scott Swartz
Diane Lehman-Turck
Ken VanderSteen
Brad Weichsel
Craig Young

Special thanks go to the support staff of the Institute of Applied Sciences, including Pamella Carmichael, Tammie Green, and Brian Ham for graphics production; Bonnie C. Yates, Zooarchaeology Laboratory Director, for project management and editing.The authors wish to thank Ms. Karen Scott and Mr. Jay Newman of the U.S. Army Corps of Engineers, Ft. Worth District, for their continuing concern and support for cultural resources in Texas. We would also like to thank the Texas Historical Commission for their helpful comments during the course of the project.

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May 1995

# CHAPTER 1

# INTRODUCTION

by

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The results of archaeological survey and testing of sites along the periphery of Lewisville Lake, Denton County, Texas, have been reported in two volumes (Lebo and Brown 1990; Brown and Lebo 1990). That work was conducted by the Institute of Applied Sciences, University of North Texas, as part of contract DACW63-86-C-0098, with the Fort Worth District, U.S. Army Corps of Engineers (COE), and was designed to identify potentially significant cultural resources that would be affected by raising the conservation pool level of Lewisville Lake. This present volume is the last in the series documenting the historical resource aspect of the archaeological survey, testing, and excavation investigations of the Lewisville Lake periphery.

Approximately 14,000 acres of shoreline were examined in the survey conducted by UNT in 1986-87. This periphery consists of land that will be affected by the pool raise planned for Lewisville Lake by controlled releases from the new reservoir Ray Roberts Lake, which is upstream 15 miles. The survey was restricted to land between the current conservation pool and the new flood pool (532 MSL). The survey recorded 122 sites (Lebo and Brown 1990). Of these, 23 prehistoric and 15 historic sites were approved for further testing. Testing was conducted at these sites in the summer of 1988. As a result of testing efforts, five prehistoric sites and three historic sites were approved for mitigation.

The remainder of this report will document the results of intensive excavation at the three historic sites conducted in the fall of 1988 at Lewisville Lake, located in Denton County, Texas. The purpose of this report is to summarize the character and significance of the archaeological sites excavated.

Results of this project represent the first fully comprehensive archaeological investigations in the Lewisville Lake project domain. The earliest professional archaeological investigations within the project area were conducted by the Smithsonian Institution River Basin Surveys (RBS). After the field survey, Stephenson (1949) reported 27 prehistoric sites in Lewisville Lake (formerly called Lake Dallas and Garza-Little Elm Reservoir). At least three sites (41DN5, 41DN6, and 41DN12) were subsequently tested, but Stephenson never published results of these investigations (Prikryl 1987:51).

After the Smithsonian Institution River Basin Surveys (RBS) were completed, Harris published several reports on his collections from several sites in the Lewisville Lake area. Among the more important sites Harris (avocational archaeologist) described are 41DN353 (Harris 1950:21-22), 41DN28 (Harris 1951a), and 41DN6 (Harris 1951b). The Lake Dallas Site (41DN6) and the Wheeler Site are the two type localities described by Crook and Harris (1952) in their definition of the Carrollton Focus of the Trinity Aspect. Site 41DN6 has subsequently been inundated by Lewisville Lake.

One of the most controversial sites reported on was the Lewisville Site, 41DN72. Radiocarbon dates derived from the features yielded dates greater than 37,000 BP (Crook and Harris 1957, 1968). Additional work was conducted at the Lewisville Site in 1979 and 1980 by the Smithsonian Institution. Additional charcoal yielded a date similar to the previous dates; however, the samples were determined to be lignite coal rather than charcoal (Stanford 1982; Schiley et al. 1985).

During the 1960s, reports of investigations at the Irish Farm Site (41DN62) (Barber 1966) and the Hackberry Site (41DN57) (Barber 1969) were published. During the 1970s, portions of the Lewisville Lake shoreline were surveyed (Nunley 1973), and a survey and testing program within an industrial park below Lewisville Lake dam (McCormick, Filson, and Darden 1975) was also done.

Work conducted during the 1980s has included reporting on a human burial from the Hackberry Site (41DN57) (Barber and Lorrain 1984; Yates 1984) and a survey of Wynnwood Park (Cliff and Moir 1985). The shoreline survey in 1986-1987 (Lebo and Brown 1990), site testing in 1988 (Brown and Lebo 1990), and mitigation of the adverse impacts upon significant cultural resources as a result of the planned water rise (Historical Aspect-this volume) are the most recent and comprehensive investigations conducted at Lewisville Lake. A survey of the proposed Hickory Creek Park was conducted by UNT in 1989. A single historic farmstead site, 41DN356, was recorded and test excavated (Lebo 1989).

Neither legal nor fiscal provisions existed in the past for intensive cultural resources investigations associated with Federal landuse programs prior to construction at other lakes in the Denton County area. At Lewisville Lake most archaeological data were collected by avocational archaeologists prior to construction (Crook and Harris 1957).

Lewisville Lake (Figure 1.1) is strategically positioned for archaeological research. On the Elm Fork of the Trinity River, the lake encompasses the confluences of several major tributaries, including Little Elm Creek and the Elm Fork of the Trinity River. The lake encompasses the edges of the Blackland and Grand Prairies and the Eastern Cross Timbers. Geographically and ecologically, therefore, this area is important with respect to understanding prehistoric settlement and subsistence patterns. Also, the location of Lewisville Lake with respect to other recent or ongoing archaeological investigations (e.g., Ray Roberts, Joe Pool, and Lavon lakes) is important in terms of anticipated comparative analysis of archaeological records in different geographic-environmental settings in the North Texas region.

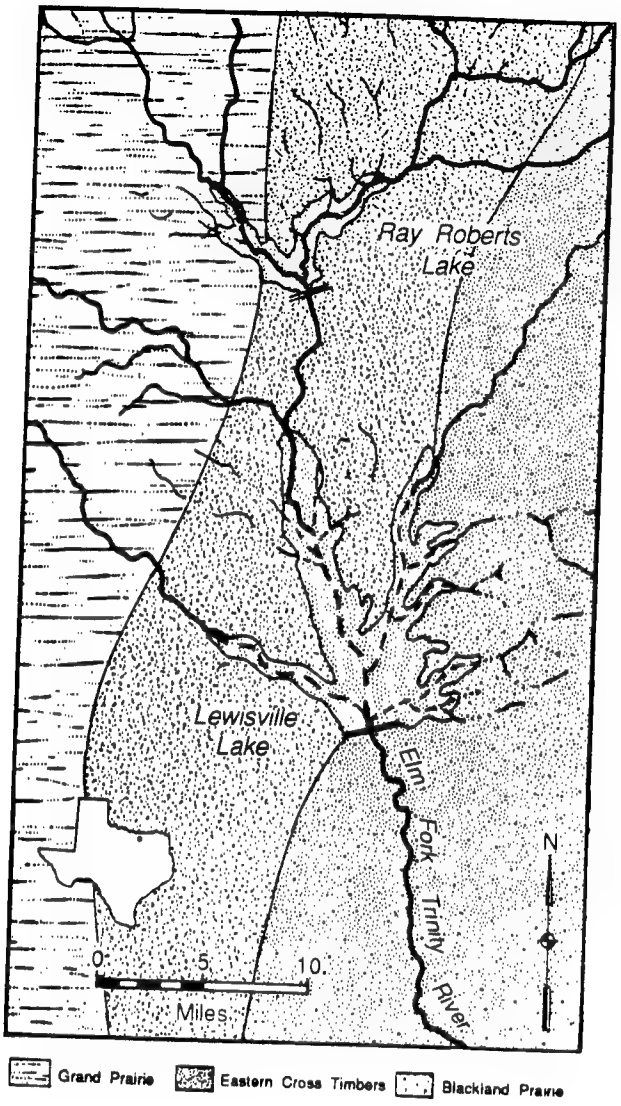



Figure 1.1 Map showing the location of the Lewisville Lake project area in the Eastern Cross Timbers and Blackland Prairie environmental zones

# CHAPTER 2

# ENVIRONMENTAL SETTING

by
**Susan A. Lebo, C. Reid Ferring, and Kenneth Lynn Brown**

## Introduction

Lewisville Lake is situated on the Elm Fork of the Trinity River, in southeastern Denton County, Texas (see Figure 1.1). In terms of its regional setting, this area is best considered one of transition from prairies in the west to forested areas to the east. Fenneman (1938) places this part of Texas in the West Gulf Coastal Plain Province, albeit very near the eastern edge of his Central Lowlands Province. Perhaps appropriate to our views, Hill (1901:62) considers this a distinct geographic region. Pertinent to archaeological considerations is the central location of the study area with respect to the Southern Plains and the East Texas forests. With respect to climate, landforms, vegetation, and faunas, this area exhibits elements of the east and west. As a zone of ecological transition, this area should have been sensitive to climatic change.

As a possible culture area, this part of Texas has long been regarded as a crossroads, at times exhibiting cultural traditions with local integrity and at others showing strong influence from adjacent regions. To investigate the cultural and ecological aspects of the archaeological record here, it is imperative to consider its geographic position, its ecological character, and the role of paleoenvironmental change with respect to local adaptive potentials as well as potential external contacts. These broad issues are considered in the Ray Roberts-Lewisville research design (Ferring and Lebo 1988).

## Climate

The climate of the Upper Trinity River Basin is humid and subtropical. Average annual precipitation is about 80 cm (31.5 inches), with peak rainfall months of April, May, and September (Ford and Pauls 1980). Summers are hot and often windy, while winter months are characterized by relatively mild conditions interrupted by periodic "northers." These arctic fronts bring very cold temperatures and often snow, sleet, or ice storms. Periodic droughts are also characteristic of this region.

Close examination of the precipitation and temperature patterns indicates two defined periods of maximum precipitation, one in the late spring and the other in early fall. The intervening summer months are hot and dry. Droughts are frequent, but their impact upon prehistorically important resources is not known (Story 1990:10).

## Biotic Resources

### Vegetation

Vegetation in the Upper Trinity River basin is edaphically controlled today. Calcareous clayey soils on Cretaceous limestones, marls, and chalks are associated with prairies. Sandy and loamy soils on Cretaceous sandstones are associated with upland forests. In the study area, the Woodbine Group sandstones and shales control the distribution of the Eastern Cross Timbers, an upland oak-hickory forest (Dyksterhuis 1948). Immediately to the west is the Grand Prairie (Hill 1901). Immediately east of the Eastern Cross Timbers is the Blackland Prairie. The distinct boundary between the Eastern Cross Timbers and the Blackland Prairie bisects Lewisville Lake (Figure 1.1). As the plant and animal resources of these two biotic zones are very different, the ecotone, in the Lewisville Lake area probably offered optimal territories for hunter-gatherer and horticultural economies in the past (Yates and Ferring 1986). Likewise, this area was favored in the historic period for its excellent farming and grazing potential.

Upland vegetation in the Eastern Cross Timbers is predominately post oak and blackjack oak, while the bottomlands include these trees along with cedar elm (*Ulmus crassifolia*), pecan, hackberry, and an understory of coral berry (*Symphroicarpos orbiculatus*), greenbrier (*Smilax sp.*), frutescents such as haws (*Ilex spp.*), hog plum (*Prunus spp.*), and dewberries (*Rubus spp.*) (Yates and Ferring 1986:18). Climax understory grasses include little bluestem, big bluestem (*Andropogon gerardii*), Indian grass (*Sorghastrum nutans*), switchgrass (*Panicum virgatum*), Canada wild-rye (*Elymus canadensis*), and sideoats grama (*Bouteloua curtipendula*) (Institute of Applied Sciences 1988:7). Prior to Anglo settlement, little bluestem was the dominant grass (McCormick et al. 1975:4). According to Hill (1887:293), the increased fertility of the soils in the Eastern Cross Timbers compared with the Western Cross Timbers explains the greater varietal difference in the flora, including both the number of species present and their size.

Dominant climax vegetation in the Blackland Prairie is little bluestem. Other important grasses are big bluestem, Indian grass, switchgrass, sideoats grama, hairy grama *Bouteloua hirsuta*), tall dropseed (*Sporobolus asper*) and Texas wintergrass (*S. leucotricha*), smutgrass (*Sporobolus indicus*), buffalo grass (*Buchloe dactyloides*), dallisgrass (*Paspalum dilatatum*). Dominant tree species are oaks, pecan, cedar elm, bois d'arc (*Maclura pomifera*) and mesquite (*Prosopis spp.*) (Institute of Applied Sciences 1988:9-10; Yates and Ferring 1986:17). Along streams, overstory species include hackberry, oaks, elms, cottonwood (*Populus spp.*), ash (*Fraxinus spp.*), and willow (*Salix spp.*). Understory species are grapes (Vitis spp.), berries, peppervine (*Ampelopsis arborea*), honeysuckle (*Lonicera spp.*), hawthorne (*Crataegus spp.*), trumpetvine (*Bignonia radicans*), along with sedges, wildrye, and paspalum in wet areas. Prairie grasses occupy drier areas (Yates and Ferring 1986:17).

### Fauna

The Lewisville Lake reservoir is located within Blair's (1950:100-102) Texan biotic province. Dyksterhuis (1948) argues that the Cross Timbers are a true woodland extension of the East Texas Austroriparian. Many species in this province are also found in surrounding provinces. Among the

more common mammals are white-tailed deer (*Odocoileus virginianus*), cottontail rabbit (*Sylvilagus floridanus*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), fox squirrel (*Sciurus niger*). Among the significant species eliminated from the area during the historic period are black bear (*Ursus americanus)* and wild turkey (*Meleagris gallopavo*), which were numerous in the Eastern Cross Timbers, and bison (*Bison bison*) and antelope (*Antilocapra americana*), which were found on the Grand Prairie (Prikryl and Yates 1987:6). Other species include the gray wolf (*Urocyon cinereargenteus*), mountain lion (*Felis concolor*), pronghorn antelope, passenger pigeon (*Ectopistes migratorius*), and Carolina parakeet (*Conuropsis carolinensis*). Cattle grazing, conversion of woodland and prairie areas to cultivation, and hunting pressures have pushed these species out of the northcentral Texas area or to their extinction (Yates and Ferring 1986).

## Environmental Setting During the Nineteenth Century

Descriptions of the land and vegetation recorded by members of trading, military, and geological expeditions exist for the study area prior to settlement. Early accounts mentioned by Dyksterhuis (1946, 1948) include De Mezieres' report to the Baron De Ripperda on his expedition of 1772 (Bolton 1914), Vial and Fragosa's expedition in 1788 (Bolton 1915), Ellsworth's journal of a trip in 1832 , Col. Stiff's journey in 1840, Josiah Gregg's trip in 1840, Kendall (1845), and Marcy (1849). Post-settlement descriptions include Hill (1887). These descriptions are conflicting about the amount of woody vegetation, but indicate that scrubby oaks characterized the Western and Eastern Cross Timbers before Anglo settlement.

In the early 1840s, settlements were established in southeastern Denton County. Peters Colonists began homesteading land along major waterways (such as the Elm Fork of the Trinity) in the Blackland Prairie and around the edge of the Cross Timbers in the Grand Prairie. These early settlers were overwhelmingly farmers who settled on good agricultural land. After 1845 or 1850 cattle ranchers from the Blackland Prairies of Northeast Texas and from the East Texas Piney Woods spread west into the Cross Timbers (Jordan 1981:134-139).

By 1860, the western frontier of the ranching industry had reached the edge of the Fort Worth Prairie and the northern portion of the Grand Prairie, including the Lewisville Lake area. Cattle grazing, cultivation, cessation of extensive prairie fires, and great droughts influenced the variety and distribution of floral and faunal species in the Cross Timbers and Grand Prairie. Prior to the 1880s, large coarse grass was abundant in the bottoms and medium height grass on the slopes and ridges. Both were replaced by shorter grasses and weeds by 1886 and 1887 (Dyksterhuis 1948:333).

Early settlers in Denton County reported that wild game and wild edible plants were plentiful, including prairie chickens (*Tympanuchus spp.*), quail (*Colinus*), turkey, ducks, geese, deer, and antelope. Buffalo (bison) were numerous in the 1830s but were gone before the mid-1840s (Bridges 1978:36). Bears, large cats (mountain lions or cougars), wolves (*Canis rufus*), coyotes, foxes, oppossum, raccoons, hawks, eagles, and rattlesnakes (Viperidae) lived in the area. Smaller game included rabbits, fish, and squirrels.

Wild plants in Denton County included plums (Chickasaw, hog, and cherry plums), grapes (postoak or turkey grapes and possum grapes), persimmons, nuts, berries, and honey. Pecans were the most common nuts, and less common types included black walnuts (*Juglans microcarpa*) and hickory nuts (*Carya* spp.). Blackberries (*Rubus* spp.) and dewberries (*Rubus* spp.) were common, while wild strawberries (cf. *Fragaria ovalis*), elderberries (*Sambucus canadensis*), and mulberries (*Morus rubra*) were less abundant (Bridges 1978). Common herbs used by the settlers include Lamb's quarters (*Chenopodium album*), dandelions (*Taraxacum officinale*), sheep sorrel (*Rumex acetosella*), volunteer mustard (*Brassica campestris*), poke weed (*Phytolacca americana*), and wild onions (*Allium* cf. *palmeri*) (Bridges 1978).

## Quaternary Geology

Late Quaternary landforms and sediments in the study area comprise the most important contexts for archaeological sites. Around Lewisville Lake, Cretaceous bedrock is exposed in a number of areas. These include outcrops (or lake-eroded exposures in Lewisville Lake) of Woodbine sandstones and shales in the western part of the lake and Eagle Ford shale in the eastern part. These bedrock outcrops mainly reflect uplands that stood well above the floodplain during the Holocene. These settings represent poor to moderate contexts for site formation, since the stable or eroding surfaces were prone to site disturbance.

Quaternary landforms include terraces and the floodplains of the drainages in the study area. The highest terrace in the study is that formerly called the $T_2$ (Crook and Harris 1957). This terrace is exposed near the shoreline in much of the eastern part of Lewisville Lake, and in a few areas along the west. The alluvial fill of this terrace is Sangamon or early Wisconsin in age, and therefore in situ archaeological materials are not expected except in younger veneers of colluvium or eolian sediments (Ferring 1986a).

Lower Pleistocene terraces are exposed along the Lewisville Lake shoreline in the upper portions of the study area, particularly along Little Elm Creek and Hickory Creek. These terrace sediments are usually sandy, and soils exhibit red argillic horizons. These alluvial deposits date to the late Pleistocene; sites occur on the terraces, but are only buried by colluvium or eolian sediments. Bioturbation can also result in seemingly buried archaeological materials (Ferring 1986a).

All principal deposits of Holocene alluvium are beneath the floodplains of the streams in the study area. In the upper parts of the Elm Fork Trinity and Hickory Creek, these deposits appear to be mostly buried by sediments that post-date lake construction.

## Past Environments

Paleoenvironmental reconstructions oftentimes are based on insufficient data. Two major problems confronting reconstruction of past environments includes, first, the phenomena of interest can rarely be observed and must, therefore, be inferred from other forms of evidence. The

second problem relates to temporal scale, with biotic, including human, reaction to climatic changes occurring in durations of days or months, while most paleoenvironmental data can only be defined for longer periods of time. This makes them of less value for determining prehistoric human responses. Therefore, much more research is needed in regards to paleoenvironmental studies.

The following is a brief review of what is known about the late Quaternary environments in and near the study area. There is considerable variation in the definition and dating of some of these chronostratigraphic concepts (Table 2.1) (Story 1990:18).

Table 2.1

Late Pleistocene and Holocene Chronostratigraphic Units[1]

| | | |
|---|---|---|
| | Late Holocene | 4,000 BP-Present |
| | Middle Holocene | 4,000 BP-7,000 BP |
| Holocene | Early Holocene | 7,000 BP-10,000 BP |
| | Late Glacial Transition post-Woodfordian substage in Midwest sequence | 10,000 BP-14,600 BP |
| Late Wisconsin | Full Glacial Woodfordian glacial substage in Midwest sequence | 14,600 BP-22,000 BP |
| Middle Wisconsin | | 22,000 BP-28,000 BP |
| Early Wisconsin | | 28,000 BP-75,000 BP |

1 Adapted from Story (1990:18).

For the Late Wisconsin, the vertebrate fauna reported from Locality 21 in Livingston Reservoir, southeast Texas, include tapir, ground sloth, mammoth, horse, and giant tortoise (Slaughter 1965:8-9). The Ben Franklin local fauna from the upper Sulphur River in northeast Texas yielded an assemblage consisting of three extant species and one extinct species associated with cool climates (a shrew, meadow vole, southern bog lemming, and giant beaver, respectively) and two species, the cotton rat and an extinct form of armadillo that are believed to have been intolerant of winters much cooler than those of the present (Slaughter and Hoover 1963; Story 1990:23).

The faunal record suggests that during the late Wisconsin, northcentral Texas would have been characterized by a more seasonally equitable climate than what occurs today. The summer temperatures would have been similar to those found in the southern Great Lakes area and the winter being similar to that of Oklahoma today (Slaughter and Hoover 1963:144).

The occurrence of predominately mastodons in the upper Sabine River basin in eastern Texas and mammoths in the upper Trinity Basin in northcentral Texas suggests that a woodlands/prairie boundary existed in its approximate modern location well back to late Wisconsin times (Story 1990:23). Pollen data from the Ferndale Bog located in the western part of the Ouachita Mountains suggests extensive grasslands had already replaced deciduous conifer woodlands by 12,000 BP (Bryant and Holloway 1985:53).

For the Holocene, two models of climatic change, both developed in Europe, have been applied to North America. The earliest model was formulated by Ernst Antevs (1955) and consists of three parts. The earliest climatic episode, the Early Holocene, was characterized by a relatively cool and moist climate. The subsequent Middle Holocene was characterized by a warm and dry climate, and the Late Holocene was characterized by a return to cool and moist conditions. The Middle Holocene has also been referred to in the literature as the Altithermal, the Climatic Optimum, the Thermal Maximum, the Xerothermic, and the Hypsithermal (Story 1990:25).

The second model, referred to as the Blytt-Sernander classification, has been formulated for North America by Bryson, Baerreis, and Wendland (1970), Wendland and Bryson (1974), and Wendland (1978). They have postulated that major environmental events occurred at approximately 7,190 B.C., 6,500 B.C., 4,030 B.C., 2,730 B.C., 940 B.C., A.D. 260, and A.D. 1,190 (Bryson, Baerreis, and Wendland 1970:63). The dates of significant environmental change were derived by analysis of radiocarbon dates in ten volumes of Radiocarbon (1959-1968) (Table 2.2).

The climatic model is based partially upon the Blytt-Sernander system widely used in Europe. Climatologists well know that the earth's atmosphere acts as a unit, and a major change in Europe cannot occur without a concurrent change in North America. The results of the changes are usually different. Analysis of radiocarbon dates and bog stratigraphy from Europe correlates with climatic changes in North America, even though the effects of the climatic changes were different. It is assumed that the atmosphere operated in a similar synchronous manner in the past (Bryson and Wendland 1967).

Selecting only those dates thought to be significant by the person who wrote the sample description, and which also indicated geologic discontinuities, the number of radiocarbon dates to be analyzed was reduced to 620. The frequency with which the 620 radiocarbon dates fell within each two centuries of the last 10,000 years was counted and subjected to a least-square computer fit of the normal distribution to actual radiocarbon dates. Results showed the radiocarbon dates tended to cluster into the seven major times of discontinuity listed above. These seven major times of discontinuity represent an objective consensus of the times at which major environmental changes occurred (Bryson, Baerreis, and Wendland 1970:53-54).

Analysis of the radiocarbon dates was used to construct a postulated "step-like" succession of post-glacial climatic episodes. This climatic model replaced the simpler model of Ernst Antevs (1955), which postulated a gradual rise in post-glacial temperatures followed by a gradual fall in temperatures.

The current climate in the Plains is determined by three major air masses: (1) the Maritime Tropical, which originates in the American tropics and the Gulf of Mexico; (2) the mild Pacific, which originates in the Pacific Ocean;and (3) the cold Arctic, which originates at the Arctic Circle. It is the interaction of these three air masses that determines temperatures and precipitation of regions within the Plains (Bryson and Wendland 1967:274). The warm Maritime Tropical air carries with it a large quantity of moisture. The cold Arctic air carries little moisture, but when it comes into contact with the warm, moist, tropical air, precipitation occurs at the juncture of these two opposing air masses.

The mild Pacific air mass can be explained in terms of western topographic features. The following are brief descriptions of what the climates may have been like during each of the major climatic episodes postulated by various authors (Table 2.2). Past climates cannot be described in detail; however, using modern mean patterns of airstreams and frontal boundaries to the modern distribution of biota, generalized reconstructions of past climatic patterns can be made. Since excavated cultural remains recovered from the Lewisville Lake project domain postdate 6,000 BP, only the last 6,000 years are of concern to this study.

Table 2.2

Past Climatic Episodes Postulated by Various Authors
Beginning Dates for Post Glacial Climatic Episodes

| Climatic Episode | Baerreis Bryson 1965 | Bryson Wendland 1967 | Bryson Baerreis Wendland 1970 | Wendland Bryson 1974 | Composite |
|---|---|---|---|---|---|
| Recent | AD 1880 | AD 1850 | | | AD 1850 |
| Neo-Boreal | AD 1550 | AD 1550 | | | AD 1550 |
| Pacific | II AD 1450<br>I AD 1250 | AD 1450<br>AD 1200 | AD 1190 | AD 1100 | AD 1450<br>AD 1100 |
| Neo-Atlantic | AD 800-900 | AD 900 | | | AD 900 |
| Scandic | AD 300-400 | AD 400 | AD 260 | AD 270 | AD 270 |
| Sub-Atlantic | 500-600 BC | 550 BC | 940 BC | 810 BC | 810 BC |
| Sub-Boreal | III<br>II<br>I | | 2730 BC | 1620 BC<br>2290 BC<br>3110 BC | 1620 BC<br>2290 BC<br>3110 BC |
| Atlantic | IV<br>III<br>II<br>I | | 4030 BC<br>5100 BC<br>5780 BC<br>6500 BC | 4100 BC<br>4960 BC<br>5790 BC<br>6540 BC | 4100 BC<br>4960 BC<br>5790 BC<br>6540 BC |
| Boreal | II<br>I | | 7190 BC<br>7700 BC | 7350 BC | 7190 BC<br>7350 BC |
| Pre-Boreal | | | ca. 8550 BC | 8080 BC | 8080 BC |

At approximately 6500 B.C., the beginning of what has been termed the Atlantic, it is hypothesized that there was rapid wasting of the glacier ice, with forests extending northward as fast as the ice disappeared. It is postulated that the central and northern Plains were subjected to drought conditions, which had a direct impact upon the indigenous human and animal populations. The grasslands probably became dominated by short grasses. Wedel (1964) postulates a virtual abandonment of the short grass Plains by human populations, while Reeves (1973) and Frison (1975) suggest the Plains did support viable human populations. Reeves believes that a focal bison hunting economy prevailed, while Frison postulates a reduction in the human population and adaptation to a more diffuse economy. It is likely that northcentral Texas may not have been so severely affected from the effects of the Atlantic (Hypsithermal) due to its latitude and proximity to the Gulf Coast (Story 1990:25). This climatic episode correlates with what has been termed the Early Archaic to the early part of the Middle Archaic periods in northcentral Texas.

Beginning at approximately 3100 B.C., during the Sub-Boreal climatic episode, there was probably a stronger flow of Arctic air into central Canada, which displaced the climate and biota southward. This would have resulted in an increase in precipitation in the Southern Plains and northcentral Texas at this time. This climatic episode correlates with the early part of the Middle Archaic to the early part of the Late Archaic periods in northcentral Texas.

At approximately 940 B.C., the beginning of what has been termed the Sub-Atlantic, it is hypothesized that the

summers were more moist than during the preceding Sub-Boreal period. This hypothesis is based upon the rapid spread of *Pinus strobus* in Minnesota, for white pine is found only in more moist climates. The character of the winters during the Sub-Atlantic period is not known. However, it appears that the winters were stormier, and the westerlies were farther south (Bryson and Wendland 1967:294). When the westerlies occur in North America, "the prairie peninsula is occupied by a wedge of air, dried by subsidence on crossing the Rockies, which is driven eastward by the westerlies. The stronger the westerlies, the farther east the dry wedge should push, and with it the associated biota" (Bryson, Baerreis, and Wendland 1970:64). An abnormally strong westerly circulation for a period of a month or several months has been observed to result in subnormal precipitation during the same periods in the Great Plains of North America (Borchert 1950:18). This climatic episode correlates with the early to latter parts of the Late Archaic Period in northcentral Texas.

Since it is postulated that the westerlies were to the south during the Sub-Atlantic, this would allow more moist air to be present in the Central and Northern Plains. At approximately A.D. 260, during the beginning of what has been called the Neo-Atlantic, weak westerlies returned during the summer, and the Northern Plains became somewhat drier. It is believed summer rains extended farther into the southwest and maize agriculture became feasible across the Great Plains (Bryson and Wendland 1967:294). This climatic episode correlates with the latter part of the Late Archaic and includes all of the Late Prehistoric I Period in northcentral Texas.

At approximately A.D. 1190, during the beginning of the Pacific episode, the westerlies increased. During this climatic episode, it is postulated that summer rains diminished in the Northern and Central Plains, while the southern Plains in Oklahoma and Texas received increased rainfall. The drier conditions in the Northern and Central Plains displaced grassland communities east across Illinois and into Indiana (Bryson and Wendland 1967:294). This climatic episode correlates with the early half of the Late Prehistoric II Period in northcentral Texas.

At approximately A.D. 1500, at the beginning of the Neo-Boreal, or 'Little Ice Age', summers were cool and autumns cold in the Eastern United States. Summer precipitation in northern New Mexico appears to have been two to three inches (5 to 7.5 cm) greater than the recent norm. Beginning at about A.D. 1850, or the recent, a return of strong westerlies brought more xeric conditions to the Great Plains, with intermittent droughts (Borchert 1950:12). This climatic episode correlates with the latter half of the Late Prehistoric II Period and early Historic Period in northcentral Texas.

These postulated paleoenvironmental changes are not simple, with past climates varying regionally (Baerreis and Bryson 1965:214). Changes in temperature are not necessarily correlated with changes in precipitation (Bryson, Baerreis, and Wendland 1970:55).

Both of the above climatic models have been used to help explain environmental changes within northcentral Texas and the Southern Plains. However, most of the evidence from the area does not fit either model very well. For the Middle Holocene, it is likely that northcentral Texas may not have been so severely affected by the Hypsithermal (Atlantic) due to latitude and proximity to the Gulf Coast (Story 1990:25). Faunal assemblages from northcentral Texas provide little information about regional changes in environment. The best evidence of changes in faunal composition, not attributed to human disturbances, is from the Kyle site in northcentral Texas (Lundelius 1962, 1967). Lundelius reports the disappearance of the least shrew, the pine vole, and a very large subspecies of raccoon from this site and other localities in central Texas after about 1,000 BP. This reflects a warming and drying trend in northcentral and central Texas at this time. No changes are noted in the faunal assemblages from the ten excavated archaeological sites within the Ray Roberts Lake project domain. All of the assemblages represent extant or extirpated fauna from the Middle Archaic (6,000 BP) through Late Prehistoric II periods.

# CHAPTER 3

# RESEARCH DESIGN

by
C. Reid Ferring, Susan A. Lebo, and Kenneth Lynn Brown

## Research Rational

Following a reiteration of the general research issues that were presented in the proposal, an overview of the research design is presented here that has structured the archaeological investigations at Lewisville Lake and Ray Roberts Lake. Our overall perspectives pertained to both prehistoric and historic investigations, since these are concerned with cultural ecology and culture history; these are domains of anthropology that are not bounded by spatial, temporal, or empirical limits. Subsequent to developing these general perspectives, however, prehistoric and historic aspects of the project are considered separately. At the specific level of research hypotheses, data requirements, and research methods, it is appropriate to discuss these two major components of the research separately. We note, however, that our research design includes general theoretical and methodological convergence with respect to prehistoric and historical issues. As shown in the following discussions, our focus on landscape evolution, social and economic patterning, and culture change provides fertile ground for diverse yet complimentary investigations into the character of occupations throughout the prehistoric and historic periods.

## General Issues

Implicit in cultural resources projects such as Lewisville Lake is the opportunity to investigate a record of human cultural dynamics within a defined region, ranging from the initial occupations to the present. Such investigations must be conducted from chosen theoretical perspectives and with chosen strategies of data collection and analysis. The fact that these are parts of a broader attempt to mitigate known and potential impacts associated with Federal landuse, i.e., that these investigations are integral to cultural resource management (CRM), is not an incidental issue. We approached both tasks set out in the scope of work and the specific cultural resources sites as part of a strategy to offset unavoidable loss of cultural resources and to minimize future losses or impacts. For practical purposes, we assumed that many of the sites investigated will either be destroyed or will be inaccessible for archaeological study for many decades to come. Under these circumstances, which are common to CRM investigations, we suggest that the chosen theoretical issues and the chosen research strategies should exhibit full concern for the state of archaeological and historical knowledge in the region and for the discipline. Our commitment in this respect was to maximize consideration of recognized deficiencies in knowledge concerning cultural history and cultural process in this region, to maximize use of methods and techniques that have been shown effective in addressing those deficiencies, and to exploit, wherever possible, methods enhancing comparability of our research with that conducted by other institutions and other agencies in this region. We will clearly define the difference between standard research methods and those that are innovative or experimental.

The environmental setting of Lewisville Lake is ideal for conducting archaeological and historical research. It encompasses two major environmental zones, the Cross Timbers and the Blackland Prairie (Dyksterhuis 1946). This environmental dichotomy is evident in both floral and faunal resources. Since climatic conditions are uniform over the project area, the basis for environmental diversity is attributable to other factors: bedrock geology, soils, and the results of differential hydrologic regimes within the project area. The details of these factors are described elsewhere (Ferring 1986a, 1986b). The importance of bedrock geology as a fundamental control of ecosystems and landform development is critical to the formulation of a strategy for investigating cultural ecology in the project area. The different lithologies (limestones, marls, sandstones, and shales) have different and predictable potentials for erosion, soil formation, and groundwater storage and release. In turn, these edaphic and hydrologic parameters define constraints on native vegetation, which in turn constitute habitats for animals. Thus, landforms, soils, ground and surface water, vegetation, and animal populations are distributed and related in dependent fashion. Ecologic and biogeographic relations within the project area at any given time are highly constrained by these factors.

Only two other factors are important with respect to local ecology and biogeography: climatic change and human alteration of the physical-biotic landscape. Both of these factors are related and, together with the other factors mentioned, constitute a framework for investigating cultural ecology and landscape evolution. Also, climatic conditions and human populations have changed throughout the 12,000 years of human occupation of this area. The goal of this project was to investigate the processes and results of changing cultural systems in the Lewisville Lake area, to relate these processes to regional records, and to explain these processes in terms of anthropological theory. The dichotomization of prehistoric and historic research methods in this design is simply an artifact of the qualitative and quantitative differences in the nature of evidence for human lifeways between these two cultural eras. Conceptually, these two eras will be studied in similar fashion. Briefly, the implications of the ecologic setting and ecologic relationships will be defined for prehistoric and historic foci of the research design. The following are the prehistoric issues addressed during this study.

## Prehistoric Issues

The culture history and cultural ecology of the Lewisville Lake area is addressed within a context of changing landscapes, changing plant and animal resources, and population dynamics. Understanding past environments in this area must begin with description of modern landforms, biotic communities, and climate/ hydrology. These provide a basis for studying past environments using geomorphology, soils, pollen, molluscs, and vertebrates recovered from well-dated stratigraphic units in the project area. Since many of these data have been recovered from archaeological sites, a

basis for relating past environments to past adaptive strategies is established. The distinct biogeographic zonation in the project area today is expected to have prevailed in the past as well; therefore, the principal focus for change is climatic variation during the late Pleistocene and throughout the Holocene. These records are used to define probable shifts in resource availability, emphasizing both character and abundance of resources within the geographic mosaic of the project area. This biogeographic reconstruction provides the basis for spatial analysis of settlement locations relative to critical resources.

The next scale of analysis focuses on how specific places (sites) were used within this mosaic during different time periods and under potentially changing environmental conditions. "Place" analysis, i.e., site analysis, will be guided by the goal of defining patterns of mobility (including periodicity and intensity of occupations), as well as the specific resource extraction and processing activities that are associated with sites. For stratified sites emphasis is placed on temporal change in patterns of site use. A clear focus for these studies is the evaluation of site-use change relative to changing resource availabilities.

These analyses required very specific kinds of data, including but not limited to: (1) a well-defined stratigraphic framework for the Pleistocene and Holocene sediments in the project areas (2) a geomorphic model of landforms in the project area integrated with the stratigraphy; (3) a radiocarbon chronology for the sediments and landforms; (4) evidence of past environments, including pollen, molluscs, vertebrates, and soils; (5) a site-location data base fully integrated into the geologic framework as well as the biogeographic framework; (6) a chronology of the sites, including dated episodes of site use; (7) data permitting site-use histories: spatial patterning and feature associations; (8) data on site activities: tools, cores, debitage, and ceramics; (9) evidence of external contacts and intersite cultural affiliations: tool and ceramic styles, as well as mineralogic analysis of stone and ceramic materials; (10) a set of analytical procedures to integrate patterns of intrasite variability with patterns of intersite variability; and (11) a set of research hypotheses and theoretical constructs to explain the observed variability with reference to population dynamics, resource availability, and exploitation patterns. The result is a spatial-temporal model of adaptive strategies and cultural evolution, i.e., a model of cultural ecology (cf. Butzer 1982). A necessary outcome of such a model is a clear understanding of cultural history in this area, including comparison of the Lewisville Lake area to other studies in this region, e.g., Ray Roberts (Brown et al. 1990; Lebo et al. 1990), Richland Chambers (Raab et al. 1982) and Joe Pool (Raab et al. 1980), Lavon (Lynott 1975), and also including smaller projects and avocational projects (cf. Lynott 1977).

### Site Formation Processes

A guiding perspective for prehistoric investigations on this project was site formation processes (Schiffer 1976, 1983; Butzer 1982). This is an area of prehistoric archaeology that has made significant contributions to the study of site construction and site modification. Essentially, the approach involves identifying the cultural and natural processes that shaped the resulting archaeological record. The intensity and repetitive aspects of site use are related to potential disturbance or mixture of artifacts and features. Erosion, weathering, bioturbation, pedoturbation, and other natural agents modify the character of the archaeological materials and features. These all impact on the character of the preserved archaeological record and our ability to infer primary patterns of site use from that record. Our emphasis has not been strictly on site modification (cf. Wood and Johnson 1978), but rather on the joint consideration of site construction (including cultural activities within a given site formation environment) and the subsequent modification or alteration of that primary record.

This approach was used on the Ray Roberts Lake project to investigate 41C0141 (Ferring 1986b), with promising results. Prehistoric sites in different geologic settings have been shown to have quite different formation contexts. Terrace sites, for example, exhibit much higher potentials for bioturbation and mixture of debris from serial occupation; by contrast, floodplain settings have better potentials for burial, superpositioning, and preservation of artifacts, faunas, and features. Thus, contrasting models of site formation are proposed and tested for terrace sites as opposed to floodplain sites. Results of these approaches can be used to evaluate newly discovered sites in the future, resulting in more efficient development of mitigation and management plans. In terms of the theoretical goals of the project, the issue of site formation is critical. Those dimensions of the archaeological record addressed by site formation analysis are critical to the study of intrasite patterning, artifact densities, spatial association of artifacts and features, and relative faunal preservation, and therefore must be considered in any evaluation of intrasite and intersite variability.

# CHAPTER 4

# HISTORIC RESEARCH DESIGN, METHODS, AND PREVIOUS INVESTIGATIONS

by
Susan A. Lebo

## Introduction

The purpose of this chapter is to briefly outline the general issues, research questions, and data requirements that guided the Lewisville Lake project, and the research methods used to gather the archival, archaeological, architectural, oral history, and laboratory data collection. The previous investigations are summarized at the conclusion of this chapter, providing an overview of the project prior to the beginning of the mitigation phase presented in Chapters 5 through 8 in this volume.

The survey conducted by the University of North Texas in 1986 and 1987 was intended to recover data on the type and frequency of cultural resources in the Lewisville Lake area between the 515-ft contour and the proposed 10-year flood elevation, the 532-ft contour, and any park lands that would be adversely affected by construction or the relocation of existing recreation facilities. The survey was also undertaken to provide an initial assessment of the research potential or significance of cultural resources within the project area based on field investigations, archival, and historical research. A total of 99 historic components were recorded. A discussion of each of these components is provided in Lebo and Brown (1990).

Archaeological test excavations were conducted at 16 historic sites in 1988. Surface and subsurface data and historical and archival data were collected for fifteen sites. The pre-1901 graves at the sixteenth site, the Little Elm Cemetery, were photographed, and inscriptions were recorded on a hand-held cassette recorder. The results of the test excavations are presented in Brown and Lebo (1990).

## General Issues

The Lewisville Lake project, like other CRM projects, provided an opportunity to investigate a record of human cultural dynamics within a defined region. Such investigations must be conducted within explicitly defined theoretical frameworks stating the hypotheses, data requirements, and research methods. The research design (Ferring and Lebo 1988) was developed to define the research directions of the Ray Roberts Lake - Lewisville Lake project. These research directions are part of a broader attempt to mitigate known and potential impacts associated with Federal landuse. Fundamental is the goal of assessing National Register significance and recovering data from those sites that meet National Register eligibility but cannot be avoided or preserved. Under these circumstances, the research design was developed to encompass theoretical issues and research methods that consider the state of archaeological and historical knowledge of the region and the discipline.

During the historic period, the Lewisville Lake area was sequentially occupied until the present by populations that adapted to the still-changing landscape used by prehistoric populations. It is clear that the ways the new populations distributed themselves and used the land changed through time (Skinner et al. 1982a, 1982b). These settlers were constrained by factors including land prices, agricultural and livestock potentials, markets for farm and ranch produce, the availability of wage-earning positions, as well as regional and national economies.

When compared with the prehistoric period, there are process changes that condition the way certain archaeological and historical problems must be addressed. For example, tool manufacture during the historic period is replaced by tool purchase, food is increasingly bought rather than produced, and other changes. These changes influence how site function is evaluated but not the basic focus on site function relative to landscape position, major economic activities on landuse potentials, and similar questions.

Geographical references include not only landform and climate, important at prehistoric sites, but also historical modifications, including roads, bridges and distance to markets, which must be considered in developing models of site location and site-use history. Archival and oral informant data provide qualitative data unavailable for prehistoric sites. These enable better determination of ethnic affiliation, economic activities, duration and character of occupations, lifeways, and sociocultural relations among project area settlers.

## National Register Criteria and Assessments

Each historic site recorded or rerecorded during the survey was evaluated for potential eligibility for nomination to the National Register of Historic Places at the end of the survey phase(see Lebo and Brown 1990). Sites recommended for testing were reevaluated after test excavations were completed in 1988 and new recommendations for National Register eligibility were made. Based on these data, three historic sites (41DN401, 41DN404, and 41DN429) were recommended for mitigation. These sites were determined to exhibit National Register eligibility and were located within the impact area. The four evaluation criteria, A-D, are presented below.

A. Association with events that have made a significant contribution to the broad patterns of our history; or

B. Association with the lives of persons significant to our past; or

C. Embodiment of distinctive characteristics of a type, period, or method of construction or representative of the work of a master, or possessing high artistic values, or representing a significant distinguishable entity whose components may lack individual distinction; or

D. Have yielded, or may be likely to yield information important in prehistory or history.

Each of these sites provides information relevent to reconstructing the "broad patterns of agricultural, rural, and settlement history" of Northcentral Texas (Criterion A). These sites, however, do not provide relevent data pertaining to prominent individuals or distinctive architectural remains (Criteria B and C). Criterion D is the most applicable for addressing the archaeological remains of these farmsteads. Three aspects of this criterion were used in assessing eligibility: (1) integrity and content, (2) ability to yield significant new information, and (3) ability to address major research questions. It is important to recognize that only general site statements can be made using survey or testing data.

Integrity is the condition of the archaeological deposits and includes information on whether the deposit is undisturbed, partially disturbed, or has been destroyed, as well as, the vertical and horizontal relationship of the site contents, including both natural and cultural stratigraphy. Content refers to the types of site elements present, including artifacts, features (e.g., discrete clusters, burials, hearths, trash pits, etc.), and structural remains.

Data recovered during survey along with results obtained from previous studies (summarized in Lebo and Brown 1990) indicate that past archaeological research at Lewisville Lake has been highly biased towards prehistoric resources. In addition, the lake was constructed before current laws requiring CRM were established, and, as a result, archaeological data for over 80% of the reservoir has been destroyed or rendered inaccessible. This has serious implications for archaeological assessments of National Register eligibility. Site types or sites dating to particular periods known to have occurred in the study area may no longer be represented. Others may exhibit poor integrity or content, yet represent the only remaining examples in the reservoir. As a result, ability to yield significant new information was assessed by comparing these aspects (integrity, content, context, frequency) of historic sites in the study area with other recorded sites at Lewisville Lake, Ray Roberts Lake, Joe Pool Lake, and Richland/Chambers Creek reservoirs (e.g., Lebo 1989a).

All sites meeting the first two aspects of Criterion D (integrity and content, and ability to yield significant new information) also exhibited potential for addressing all or some research questions. Sixteen sites were recommended for testing based on preliminary assessments made using surface reconnaissance, shovel testing, and surface collection data.

Testing was recommended to obtain additional information from sites exhibiting National Register potential based on limited survey data. Archival research was recommended to verify or refine archaeological dates for historic sites, to recover site-specific information, (including landuse, ownership, ethnicity, and socioeconomic status of the occupants), as well as community or region-wide data on changes in settlement and landuse, which could be used to further assess National Register eligibility.

## Research Issues

The primary reason for studying historic cultural resources is their ability to provide information about settlement, landuse, and lifeways not available in historical documents. Farmstead archaeology has become an integral part of historic archaeology in the last 20 years and is important for several reasons. According to Cliff and Moir (1985:5),

> First, until the second decade of the twentieth century, a majority of households in America were located in rural settings and were agrarian (Eldridge and Thomas 1964). In many parts of Texas, over half the rural population was made up of farming households until after World War II (Lee 1982). Consequently, the archaeology of farmsteads and traditional lifeways of agrarian households is of great interest because it relates directly to the roots of many Americans... Despite these facts, nineteenth and early twentieth century farmsteads in Texas have received very little archaeological attention (Fox 1983)...[Secondly, farmsteads exhibit] unique potential for measuring certain elements of household consumption and change.

Necessary data sets for studying nineteenth and early twentieth century settlement, landuse, and lifeways include: (1) cultural assemblages or content, (2) context, (3) subsistence, and (4) structural remains. A multidisciplinary approach involving archaeological, geological, archival, oral history, and faunal studies was developed.

Cultural assemblages provide information on the access to and utilization of specific types of goods, the types of activities carried out, and the socioeconomic status, ethnicity, and landuse patterns of residents at sites in the study area (e.g., Miller 1980; Moir 1982, 1987a, 1987b, 1988a, 1988b; Saunders 1982). These data can be compared with information from other sites and with historical records to study social, economic, and settlement changes within the region.

Site context refers to the spatial distribution or relationship of artifacts, features, structures or structural remains, and activity areas. Site planning studies, including yard proxemics (see Moir 1987a, 1987b, 1988a), indicate relationships among socioeconomic status, ethnicity, farm size, functional or landuse considerations, length of occupation, and the type of and placement of features and structures.

Subsistence studies involve identification of faunal and floral remains that may reveal diet, husbandry, butchering, consumption, and refuse disposal patterns. These patterns are useful for examining changes in adaptation strategies and for comparing site-specific and regional historical documentation of ethnicity, socioeconomic status, and landuse and productivity.

Architectural studies involve changes in the frequency and distribution of building styles and the relationships between environmental and cultural factors, including surface geology and ethnic or geographic origin. These data can be used in conjunction with documentary sources to reconstruct the architectural landscape of the study area.

## Research Questions

The historic research was directed by, but not limited to, the eight research questions developed prior to the survey (Ferring and Lebo 1988). These questions (Q) are given below with the test implications (I) for each, followed by a discussion of the data requirements

Q1. *The distance to source areas for goods and services for families in the Lewisville Lake project area is reflected in the distribution (i.e., dispersal or compactness) of settlements.*

I1. Areas with easier access to goods and services were settled first and exhibited greater compactness than those with more difficult access.
I2. Establishment of settlements and communities was in direct proportion to market access.
I3. Establishment of new markets, goods, and services such as sawmills and pottery kilns, occurred in areas with low market access and high demand.

Q2. *The distance to source areas for goods and services differed among areas within Northcentral Texas before 1870, and this variability is reflected in the establishment of industrial sites (e.g., sawmills, pottery kilns), site dispersal, and artifact diversity. Sites located near major sources, such as pottery kilns, reflect lower artifact diversity for those resources than sites located farther from source areas.*

I1. Artifact diversity indices for specific resources will vary among sites in different areas of Northcentral Texas relative to differences in access, transportation costs, and availability.
I2. Greater artifact diversity indices will occur for sites located near major industries or communities (e.g., Dallas, Denton, Pilot Point) than those located farther away.

Q3. *Variability in the artifact and architecture assemblages from farmsteads in the Lewisville Lake area will reflect differences in site size, complexity, socioeconomic status, ethnic affiliation, date of initial occupation, length of occupation, and the rate of occupation turnover. Diachrony in the interaction of these factors and farmstead assemblages can be quantitatively measured.*

I1. The factor(s) that may be used to explain the variability among farmsteads exhibit diachrony. In other words, the type of variability evident between farmsteads is not static, nor are the factors that explain the variability. For example, landownership versus tenant status may explain the variability between farmsteads occupied during the Depression, but not the variability among sites at other periods.
I2. Given a representative sample of the farmsteads in the project area, the measurement of variability among sites will vary over time as the types of sites and activities conducted in this region changes. During the early settlement period, few industries were established and many items were imported or produced on farms or by small enterprises. As population size increased, transportation routes improved, and economic lifeways changed, evidence of these changes will be reflected in the natural culture diversity of archaeological sites within this region.
I3. There are minimum threshold limits within each factor that must be reached before variability is exhibited in the archaeological record. In other words, no variability will be evident among farmsteads until a threshold limit is reached (e.g., landownership). Based on data from the Richland Creek area (Jurney and Moir 1987; Moir and Jurney 1987) landownership was determined an important status indicator when holdings reach a size well above 300 acres. Sheet refuse patterning and building styles indicated that ownership versus nonownership of land was of little direct importance at farmsteads in the area which were comprised of less than 300 acres. This pattern held across ethnic and racial lines. Similar data were recovered from the Joe Pool Lake area (Jurney, Lebo, and Green 1988).

Q4. *The distribution of farmsteads in the Lewisville Lake area reflects the productivity of the local environment, including market demands. Major environmental factors that affected the location of early farmsteads, industries, and settlements include soil type, topography, availability of water, and vegetation. During later periods, environmental factors such as the loss of soil productivity, boll weevil infestations, and droughts affected the survival potential of farmsteads.*

I1. Major environmental variables can be used to explain landuse patterns in the project area.
I2. The importance of local environment may be perceived rather than actual, but it is nonetheless an important controlling factor. This situation has perpetuated the adage, "areas with environments similar (e.g., soil type, topography, vegetation) to those where the individuals immigrated from were settled first."
I3. These factors affected the role of farms in the project area, resulting in a shift from largely self-sufficient farms to specialized farm production and the replacement of family farms by agribusiness enterprises.

Q5. *Site function and/or activity areas will be reflected in the artifact assemblage and architecture of domestic and industrial sites.*

I1. In the absence of standing architecture, site function can be determined by examining the archaeological assemblage.
I2. The assemblages (artifact and architecture) from domestic sites will be statistically more similar to other domestic sites than with industrial sites.

Q6. *The introduction, assimilation, dispersal, and duration of different architectural styles and technologies identified on the rural landscape at Lewisville Lake reflects sociocultural, economic, and political factors and changes.*

I1. Specific styles and/or technologies have their roots in the traditional culture brought by settlers to the project area when they immigrated here.
I2. Areas of settlement in the project area that were characterized by social, economic, and political

heterogeneity exhibit a higher rate of assimilation and alteration or mixing of building styles and technologies than homogeneous areas, where "traditional" styles and technologies changed more slowly.

I3. Different styles and building technologies may be distributed differently across the landscape, with some continuing to be used (although possibly modified) long after others have disappeared.

Q7. *Access to goods and services (economic variables) is the most important factor affecting the material record. This factor is less important at early sites where access is limited regardless of economic status. However, as geographical and cultural barriers are reduced, variability between sites will reflect economic access not cultural heritage. In other words, the assemblages at early sites will reflect many of the artifact and architecture styles and technologies brought by new immigrants. Later, these styles and technologies will be replaced by goods and services produced locally or regionally, and differences between sites will reflect differential access to these products and not differences in cultural heritage.*

I1. Changes in access to goods and services will be reflected in the material record and greater diversity will be evident when access is significantly unequal among socioeconomic, ethnic, or political groups.

I2. Economic access is the most important factor for explaining variability among farmsteads occupied during the same period.

Q8. *Cultural stratigraphy occurs in the material remains at farmsteads in the project area. Statistically similar material culture patterns will occur at sites of similar age occupied by only one family. Greater diversity will be evident for serially occupied sites, or sites occupied for longer periods.*

I1. The frequency, type, and spatial distribution of the material culture remains at farmsteads in the project area will be evident in both the vertical and horizontal stratigraphy of sites. These patterns will reflect diachronic change in activity areas during the lifespan of a farmstead, whether it was occupied by a single family or several. However, sites that were serially occupied, particularly if the location of the dwelling changed, will exhibit a greater overlapping and mixing of components.

I2. Material culture remains (including architectural items) associated with specific structures will vary as building function, size, and/or location changed as a result of modifications, recycling, or removal.

I3. Sheet refuse represents the total deposition of material culture remains which results from initial occupation through abandonment, including post-occupational deposition. This "artifact rain" may include cultural remains that differentially reflect cumulative occupations. Frequency and recovery of remains will be biased towards those deposits near the end of occupation or after abandonment.

## Historic Data Requirements

Development of explicit data requirements is essential for testing the research questions. An examination of diachronic culture change during the mid-nineteenth to mid-twentieth centuries in the Lewisville Lake and other locations in northcentral Texas requires delineation of specific variables to be investigated. These variables are: (1) environmental and cultural diversity, compactness, and density, (2) economic access, mode of transportation, and market-distribution systems, (3) site types and diversity, (4) artifact and sheet-refuse diversity and architectural diversity, (5) site size, (6) site complexity, (7) socioeconomic status, (8) ethnic affiliation, (9) duration of site use, and (10) cultural stratigraphy. Each of these variables are discussed below.

### Environmental and Cultural Diversity

Major environmental zones in the Lewisville Lake area include the Eastern Cross Timbers and the Blackland Prairie (see Chapter 1). Their distribution is plotted and the location of specific site types, including farmsteads, industrial sites, political, social, and public buildings, and communities will be identified. Bridges, road systems, ferries, and markets will be recorded. Such distribution maps will allow us to determine the relationships of the site types with temporal and spatial changes.

### Economic Access and Market Distributions

The size and distribution of market centers changed dramatically in the Lewisville Lake area during the mid-nineteenth and mid-twentieth centuries. Early settlements were isolated from large markets before the 1870s when railroads reached Dallas, Denton, and Sherman. Prior to this time, ferries and wagons served as the primary transporation modes for goods and services and people. After 1870, railroad service was established and new markets for importing and exporting opened up. By examining market distributions, transportation systems, and where the goods and services purchased by families in the area were produced, it will be possible to reconstruct market access.

### Site Type and Diversity

As mentioned above, several site types occur in the lake area. The frequency and distribution of these site types will be determined to obtain a diversity index for the project area. The artifact assemblages from lake sites will be compared to determine if significant differences occur in the frequency and distribution of major artifact categories between major site types.

The distribution of each site type will be determined and compared with distributions obtained for a variety of environmental and cultural variables (e.g., environmental zones, topography, soil type, ethnic affiliation).

### Artifact and Architecture Diversity

These data sets will be obtained using the same methods mentioned above. Diversity indices will also be calculated for major artifact categories within sites. This will allow us to examine differences in the frequency and distribution of specific artifact categories within major yard areas.

### Site Size and Complexity

Site size will be determined by the spatial distribution of architectural remains, features, and sheet-refuse deposits at historic sites rather than total land holdings. Site complexity will include the types, frequencies, and distributions of architectural remains (e.g., cellars, dwellings, fences, outbuildings) and archaeological components. Site formation processes and soil dynamics may also affect site complexity.

### Socioeconomic Status and Ethnicity

Maps, deed/title records, historical accounts, and local histories will provide data on socioeconomic and ethnicity patterns in the Lewsiville Lake area. Major socioeconomic groups include sharecroppers, tenants, and small, medium, and large landowners. Ethnic groups include Euro- and Anglo-American, African-Americans, and Hispanics. Both foreign born and American-born immigrants, and descendents of local settlers occupy the lake area.

### Duration of Site Occupation

Duration of site occupation will be estimated using both archival and archaeological data. Mean beginning dates will be calculated for ceramic and bottle glass assemblages. Architectural data and oral history information will be used when available.

### Cultural Stratigraphy

Both horizontal and vertical stratigraphy will be examined to reconstruct the distributions of major architectural and artifact categories.

## Research Methods

The research methods and techniques developed and used on the project were designed to maximize data recovery for addressing the research questions discussed above and assessing National Register eligibility during the testing phase. This was accomplished using a multidisciplinary approach incorporating geology, archaeology, biology, environmental science, architecture, and history. This approach was designed to complement and utilize the results obtained from archaeological excavations at Ray Roberts Lake and other reservoir projects in the region (e.g., Joe Pool Lake and Richland-Chambers Creek). Discussion of the research methods is divided into three sections (1) field, (2) lab, and (3) historical research.

### Field Methods

Fieldwork was accomplished using (1) shovel test pits, (2) 1x.5-m and 1x1-m test units, (3) blocks containing 2x2-m or 4x4-m units dug in 2x2-m quads, (4) backhoe trenches and machine scraping, (5) hand-excavated trenches, (6) systematic surface-collection blocks, and (7) magnetometer surveying. The methods used at each site varied depending on several factors, including (1) level of data collected during survey, (2) site age, (3) site size, (4) artifact density, (5) presence or absence of surface features, and (6) site integrity.

The shovel test pits were dug as a single level to sterile. The matrix was screened through 1/4-inch hardware cloth. These units were not given coordinates, and sterile shovel test pits placed outside the site area were not mapped.

The standard test unit size used at all sites was 1x.5m. Shovel test pits were dug at sites with poor integrity where vertical control was less important. Shovel test pits provided a rapid method of assessing site size and age at disturbed sites and for determining site limits. The number of 1x.5-m units and shovel test pits excavated at each site was determined by site size and site integrity. Few units were dug at sites with poor integrity.

Test units were excavated in arbitrary 10-cm levels using the SW corner as the unit datum. Elevations were taken from this datum corner and then tied to a site datum. All levels were dry screened through 1/4-inch hardware cloth. Larger test units were dug in high density features. Fine-screen samples were collected in several features. No flotation samples were recovered.

Blocks containing 2x2-m or 4x4-m units excavated in 2x2-m quads were dug during the mitigation phase at the three National Register eligible historic sites. These blocks were dug in arbitrary 5-cm or 10-cm levels to recover information on architectural remains, features, and sheet-refuse deposits. Two blocks were dug at 41DN404, while one block was dug at 41DN401, and one at 41DN429.

Backhoe trenches were used to recover geological information, including sediments and site formation processes. Backhoe trenches were judgmentally placed to investigate magnetometer anomalies and surface features, such as depressions that might be of archaeological significance. Trench orientation was judgmentally determined based on several factors, including site slope and the orientation of magnetometer anomalies and surface features (e.g., house mound). Backhoe trenches were also used to augment the excavation of 1x.5-m units by exposing large areas.

Machine scraping was used to remove the A-horizon in areas where we were interested in searching for features visible in the B-horizon, particularly trash pits, fence lines, and building foundations. Hand-excavated trenches were utilized to recover a representative sample of archaeological features identified during survey or early in testing (e.g., high density sheet-refuse middens and trash pits). Systematic surface collection was implemented at sites that yielded low density subsurface deposits or only surface artifacts during survey. This approach was used to maximize locating and identifying subsurface archaeological features at several sites. Magnetometer surveys were conducted at both low and high density sites to aid in identifying

subsurface features and recover sufficient data for making assessments of National Register eligibility.

All sites were mapped using a transit. All features (e.g., wells, house mounds, fence lines) and units were mapped. A grid was established for each site with grid north (GN) corresponding to magnetic north (MN). A permanent datum, a brass monument marker, was set in concrete at each site. All backhoe trenches were profiled with at least a 10-m section being exposed and profiled in each trench. A planview was recorded for all features. Color slides were taken at each site, including site overviews, features, and representative units.

The testing results are presented by site in Brown and Lebo (1990) and a summary of the mitigation sites, 41DN401, 41DN404, and 41DN429, is presented in Chapter 10 of this volume. Faunal inventories for these sites are given in Appendix A.

### Laboratory Methods

Artifacts and special samples (e.g., fine screen) recovered during testing were sent to the laboratory where they were inventoried, processed, analyzed, and curated. The historic classification system is presented in Appendix D. The first level of analysis, unit coding, involved recording artifact counts by artifact category for each unit level. This provided an overview of assemblage content for each site that could be used to identify site function and, at a gross level, site age and research potential. These data are provided by site in Chapter 8.

In the second analysis level, detailed analysis, emphasis was placed on ceramics, bottle glass, and architectural remains because they provide the greatest information for dating historic components. Mean beginning dates (MBD) were calculated for refined earthenwares, stonewares, and bottle glass assemblages from each site. Only diagnostic, datable sherds were used. All other sherds (e.g., burned and discolored refined earthenwares and nondiagnostic bottle glass) were excluded from the calculation of MBD values. Refined earthenware dates were based on beginning popularity dates for types defined by paste, glaze, and decoration (e.g., light blue-tinted whiteware, plain, 1880-1930). Stoneware beginning dates were based on interior/exterior glaze combinations (e.g., natural clay slip/bristol glaze, 1890), while bottle glass dates were based on diagnostic manufacturing attributes (e.g., turn-molded, non-applied lip, 1880).

Mean beginning dates were determined by summing the beginning date for each diagnostic artifact (by category) and dividing by the number of artifacts. The formula used is:

$$MBD = \frac{SUM\ (x_i \ldots x_n)}{N}$$

Mean beginning dates were obtained separately for refined earthenwares, stonewares, and bottle glass, and a combined MBD value was then obtained. This approach allowed the dates obtained for different categories to be compared. The combined MBD value provided the most useful date for each site, particularly when sample sizes were small. Many of the MBD values are not statistically valid because of sample size, but do provide a gross date that can be correlated with architectural, archival, and oral-history data to provide a relative beginning date.

Mean beginning dates were calculated instead of median dates because MBD is not influenced by how long a type was available. Variability was evident between the MBD values obtained for different artifact categories. This variability was primarily the result of differences in the accuracy with which we currently are able to date specific artifact types. Sample size was also a factor at some sites.

At sites containing discrete deposits (e.g., house mound, trash dump, sheet refuse midden) separate dates were obtained for each deposit. In some instances, it was possible to identify different occupations or features that post-dated occupation.

The results of the laboratory analyses are presented by site in Chapter 9. Comparative discussions are presented in the synthetic overview in Chapter 11.

### Historical Research

The historical research conducted during the testing was directed towards recovering data from archival and oral history sources. Archival research, the study of historical documents is a vital part of historic archaeology. This research was begun during the survey and continued through the mitigation phase. During survey, emphasis was placed on recovering a general overview of the local and regional history, primarily available from secondary sources. Historical maps, photographs, books and journal articles on local history were examined. During testing, the archival research was directed towards recovering information on specific aspects of the historic landscape directly pertinent to the sixteen sites recommended for testing. Primary sources were emphasized and included diaries, journals, and tax, land, and census records. Archival research during both the survey and testing was conducted at the Dallas Public Library, the Willis Library at the University of North Texas, the Denton County Courthouse, and the Carroll Courts Building in Denton.

Oral history research was more limited, being directed towards informal interviews primarily with amateur and professional historians, researchers, and members of historical societies. Archival and oral history research at the Little Elm Cemetery, 41DN395, was greatly aided by the caretaker, Mr. Stubblefield, who was informally interviewed while we were documenting the pre-1901 graves, and later on the phone. No formal oral history interviews were conducted.

## Previous Investigations

### Overview

A discussion of the previous investigations within the Lewisville Lake area is presented here because these earlier studies directly impacted the development and implementation of the Scope of Work and the research design. As mentioned earlier in this chapter, the Scope was developed by the Corps to address the legal requirements for identifying and mitigating the adverse impacts on National Register eligible cultural resources. The research design was developed to specify the research questions

that would be used to direct the archaeological work and how the contractual goals specified in the Scope of Work would be met.

Documents produced by previous researchers were examined and efforts were made during the survey to relocate all previously identifed archaeological (prehistoric and historic) sites in the study area to determine their National Register eligibility along with all newly recorded sites. This process was necessary to ensure that all potentially National Register-eligible sites were assessed and included in nominations made for resources within the study area. While none of the previously recorded sites directly within the study area are currently on the National Register, potential eligibility had not been determined for many of them.

Professional archaeological research in the project area was undertaken in the 1940s and 1950s (Stephenson 1948a, 1948b, 1949, 1950, 1952), but the majority of the research has been carried out by amateurs during the construction of Lewisville Dam, which began in November, 1948, and was completed in November, 1951 (Anon. 1971:45, cf. Nunley 1973:1). Similar research was not required and was not conducted when Lake Garza was constructed.

The Historic Pottery Kiln Survey was conducted by the Texas Historical Commission in the early 1970s and focused on locating and recording nineteenth century stoneware pottery kiln sites throughout the state. This work was initiated in Denton County. Four potteries in the county, Cranston (41DN16), Roark (41DN18), Wilson (41DN19), and Serren (41DN75) were considered eligible for nomination to the National Register of Historic Places (Georgeanna Greer, personal communication 1986). Two potteries, Cranston and Roark, are located on the edge of the reservoir. Early historic sites within the reservoir contain sherds from stoneware vessels produced at Denton County potteries, including Cranston and Roark.

A survey of the reservoir between the 515 and the 532-ft contour elevations was funded by the Corps in December, 1972. Work was carried out under the direction of Parker Nunley to study the effects of the proposed conservation pool increase from the 515 to 522-ft contour on the cultural resources within the impact area. Approximately 40% of the impact area was surveyed (Nunley 1973:3).

Using data collected from previous professional (e.g., Historic Pottery Kiln Survey; Stephenson 1948a, 1948b, 1949, 1950) and amateur studies, Nunley (1973) identified thirteen historic components, including nine located above the 532-ft contour, three historic stoneware potteries (Cranston, Roark, and Serren), five surface scatters, one cemetery, and four farmsteads. Five sites (41DN11, 41DN24, 41DN37, 41DN47, and 41DN58) were identified as prehistoric (Nunley 1973), but later research indicates they also contain historic components (Lebo and Brown 1990). Three (41DN11, 41DN24, and 41DN37) are historic scatters, and two are farmsteads (41DN47 and 41DN58). A more detailed discussion of these is provided in Lebo and Brown (1990).

A second survey funded by the Corps was conducted by Southern Methodist University (SMU) at Wynnwood Park in 1985. The work was undertaken to identify and evaluate historic and prehistoric resources within the 695-acre park scheduled to be impacted by a proposed golf course. Thirteen archaeological sites, including one prehistoric component (41DN288) and thirteen historic components were found. Seventeen localities or isolated finds were also found (Cliff and Moir 1985). All project lands were surveyed. A representative sample of surface scatters was collected, and subsurface testing was conducted where appropriate. The historic components ranged in age from ca. 1860 to 1950 with the majority dating between 1890 and 1950 (Table 4.2). Based on the recommendations made by Cliff and Moir (1985), four components were determined eligible for the National Register of Historic Places (41DN281, 41DN284, 41DN286, and 41DN289). A detailed discussion of this survey is provided in Cliff and Moir (1985).

Our survey, also funded by the Corps, was conducted in 1986 and 1987. The survey area was defined by the existing shoreline and the 532-ft contour. A total of approximately 14,000 acres was intensively surveyed. Auger holes and shovel test pits were excavated in high probability areas. Historic maps were used to help locate and date historic sites within the survey area. Eighty-five historic sites were recorded during the survey. An additional site was identified during construction work at Hickory Creek Park in September, 1989. Including Wynnwood Park (n=13), 99 historic components have been identified and recorded at Lewisville Lake. An overview of all historic sites in the present study area are presented in Table 4.1.

Table 4.1

Overview of Historic Components in Present Study Area

| Site[1] | Compo-nent[2] | Site Type[3] | Date Range[4] | Integ-rity[5] | Poten-tial | Recom-mend-ation[6] |
|---|---|---|---|---|---|---|
| DN11 | P/H | S | 1890s-? | Poor | None | None |
| DN24 | P/H | S | ? | None | None | None |
| DN34 | H | S | e. 20th c. | Poor | None | None |
| DN37 | P/H | S | ? | Low-mod. | Poor | None |
| DN40 | P/H | S | ? | Poor | Poor | None |
| DN43/44 | P/H | F | 1890s-1940 | Low-mod. | Mod. | Test |
| DN47 | H | F | e. 20th c.-recent | None | Low | None |
| DN58 | H | F | 1875-1940 | Poor | Poor | None |
| DN343 | H | F | e. 20th c. | Poor | Poor | None |
| DN354 | P/H | S | ? | None | None | None |
| DN366 | H | F | 1880s-1950s | Poor | Poor | None |
| DN367 | P/H | F | ? | None | None | None |
| DN369 | P/H | S | ? | None | None | None |
| DN371 | H | F | 1895-1940 | Low-mod. | Low-mod. | None |
| DN373 | P/H | S | ? | None | None | None |
| DN375 | P/H | S | ? | None | None | None |
| DN377 | P/H | S | l. 19th c.-? | Low | None | None |
| DN379 | H | F | 1890s-1940 | Poor | Low | None |
| DN388 | P/H | S | l. 19th c.-? | None | None | None |
| DN390 | H | F | 1900-1950 | Poor | None | None |
| DN391 | H | F | 1890s-1950s | Poor | Low | None |
| DN392 | P/H | S | 1860s-e. 20th c. | Low-mod. | Low-mod. | Test |

Table 4.1 (cont.)

| Site[1] | Component[2] | Site Type[3] | Date Range[4] | Integrity[5] | Potential | Recommendation[6] |
|---|---|---|---|---|---|---|
| DN393 | H | F | 1880-recent | Poor | None | None |
| DN394 | H | ? | 20th c. | Poor | None | None |
| DN395 | H | C | l. 19th c.-present | Good | Good | Document |
| DN397 | P/H | S | 1870-1920s | Poor | None | None |
| DN398 | H | S | 1880/90-1930s | None | None | None |
| DN399 | H | F | 1890s-1950s | Good | Poor | None |
| DN400 | H | F | 20th c.-recent | Poor | Low | None |
| DN401 | H | F | 1880-1940 | Mod. | Good | Test |
| DN402 | H | F | 1880-1940 | Mod. | Low-mod. | Test |
| DN403 | H | F | 1880s-1940s | Low-mod. | Low | Test |
| DN404 | H | F | 1870-1930 | Low-mod. | Low-mod. | Test |
| DN405 | H | S | e. 20th c. | None | None | None |
| DN406 | H | F | 1870-1930 | None | None | None |
| DN407 | H | F | 1870s-1940s | Low | Low-mod. | Test |
| DN408 | H | I | 20th c.? | None | None | None |
| DN409 | H | F | 1880-1940 | Low-mod. | Mod. | Test |
| DN410 | H | S | 1870-1910 | Low | Low-mod. | Test |
| DN411 | P/H | F | 1880-1940 | Low-mod. | Low-mod. | Test |
| DN413 | H | S | 1870s-1940 | Poor | None | None |
| DN414 | H | S | l. 19th c.-1930 | Poor | None | None |
| DN415 | H | S | 1880s-1930 | Poor | None | None |
| DN416 | H | F | 1880s-1940s | Poor | None | None |
| DN417 | H | F | 1920s- | Poor | None | None |
| DN418 | H | S | 1880s-1940 | Poor | None | None |
| DN421 | H | F | 1900-1940s | Poor | None | None |
| DN422 | H | F | recent | Poor | None | None |
| DN423 | H | F | 1880-1940s | Mod. | Mod. | Test |
| DN424 | H | F | 1880-1940s | Mod. | Mod. | Test |
| DN425 | H | S | 1900-1940 | Poor | None | None |
| DN426 | H | S | 20th c. | Poor | None | None |
| DN427 | P/H | S | 1875-1920 | Poor | None | None |
| DN428 | H | F | 1870-1940 | Mod. | Mod. | Test |
| DN429 | H | F | 1870s-1940s | Mod. | Mod. | Test |
| DN430 | H | F | 1890s-1950s | Mod. | Mod. | Test |
| DN431 | H | S | 1880-1940s | Poor | None | None |
| DN432 | H | F | 20th c.-recent | None | None | None |
| DN433 | H | S | l. 19th c.-1940s? | None | None | None |
| DN434 | P/H | I | recent | None | None | None |
| DN437 | P/H | S | l. 19th c.-recent | None | None | None |
| DN438 | H | F | 1890-recent | None | None | None |
| DN439 | H | S | 1895-1930s | None | None | None |
| DN440 | H | S | 1870-1910? | None | None | None |
| DN445 | P/H | F | ? | None | None | None |
| DN446 | P/H | S | l. 19th c.-? | Low | None | None |
| DN447 | P/H | S | l. 19th c.-? | Mod. | Low | None |
| DN449 | P/H | S | ? | None | None | None |
| DN450 | H | F | 1880s-1920s | None | None | None |
| DN451 | H | S | 1880-1920s | None | None | None |
| DN452 | H | S | 20th c. | None | None | None |
| DN453 | H | S | ?- 1940 | None | None | None |
| DN454 | P/H | S | ? | None | None | None |
| DN456 | H | S | 1900-1920 | None | None | None |
| DN457 | H | B | 20th c. | Low | Poor | None |
| DN458 | P/H | D | Modern | Poor | None | None |
| DN460 | H | F | 1880s-1950s | Poor | Poor | None |
| DN461 | P/H | I | ? | None | None | None |
| DN462 | H | F | 1900?-1940 | Low-mod. | Low-mod. | None |
| DN463 | H | D | 20th c. | None | None | None |
| DN464 | H | F | 20th c. | Poor | None | None |
| DN465 | P/H | F | l. 19th c.-e. 20th c. | None | None | None |
| DN471 | H | S, D | 20th c. | None | None | None |
| DN472 | H | F | 1900-recent | None | None | None |
| DN474 | P/H | S | 20th c. | None | None | None |

1 Site number is preceded by 41 (e.g., 41DN11).
2 H=historic; P=prehistoric.
3 B=bridge; C=cemetery; D=dump; F=farmstead; I=isolate; S=scatter; ?=unknown.
4 e. = early; l. = late.
5 None=no intact deposits or features; Poor=features, no intact deposits; Low=features, possible buried deposits, minimal disturbance; Mod.=features, buried deposits, minimal disturbance.
6 None=no further work recommended.

## Results

The results from the previous investigations and our survey indicate that artifact scatters and farmsteads are the dominant site types in the study area (Table 7.1). No industrial sites, businesses or towns were recorded. These data also indicate that both artifact scatters and farmsteads are dispersed, overlap in distribution, and occur in all major drainage areas. Nineteen historic scatters occur in the western half of the study area, in the Eastern Cross Timbers, while twenty-three are located in the eastern half, in the Blackland Prairie. However, almost twice as many farmsteads occur on the Blackland Prairie (n=39) as in the Eastern Cross Timbers.

Approximately 68% of the datable components dated before 1900, and 63% of these dated before 1890. Sites initially occupied prior to 1880 (n=14) include five in the Eastern Cross Timbers and nine in the Blackland Prairie. This supports historical and archival data suggesting that the Blackland Prairie was preferred over land in the Eastern Cross Timbers because of its suitability for farming. Twenty-eight sites initially occupied between 1880 and 1900 were identified, 10 occuring in the Eastern Cross Timbers and 18 in the Blackland Prairie.

These data indicate that the project area was heavily utilized during the nineteenth and early twentieth centuries. Early components found in the study area date primarily to ca. 1870. No clearly identifiable pre-Civil War components

were located, although historic information indicates this area was initially settled around the 1840s. The earliest dated component was 41DN289 in Wynnwood Park. It is a surface beach scatter and was assigned a date of ca. 1850 to 1855 (Cliff and Moir 1985).

Initial occupation in the 1870s to 1900s is clearly indicated by the components recorded in the project area (see Table 4.1). The area was heavily utilized in the twentieth century, and urban sprawl, reservoir construction, and industrial development have adversely impacted many early components. In addition, it should be noted that the distribution patterns discussed above are only based on components between the 515 and 532-ft contours. No data are available for components located below the current lake level or above the 532-ft contour, so regional reconstructions of past distributions cannot be determined using these archaeological data.

Table 4.2

Historic Components in Project Area Recommended for Testing

| Site[1] | Site Type[2] | Date Range | Integrity | Potential[3] |
|---|---|---|---|---|
| DN43/44 | F | 1890s-1940 | Low-mod. | Mod./F, BD |
| DN392 | S | 1860s- early 20th c. | Low-mod. | Low-mod./ EO, SO |
| DN395 | C | 1860s-present | Mod. | Cemetery |
| DN401 | F | 1880-1940 | Mod. | Mod./F, BD |
| DN402 | F | 1880-1940 | Mod. | Low-mod./ F, BD |
| DN403 | F | 1880s-1940s | Poor-Low | Low/F |
| DN404 | F | 1870-1930 | Poor | Low-mod./ F, EO |
| DN407 | F | 1870s-1940 | Low | Low-mod./ EO |
| DN409 | F | 1880-1940 | Low-mod. | Mod./F |
| DN410 | S | 1870-1910 | Poor | Low-mod./ EO, SO |
| DN411 | F | 1890-1940 | Low-mod. | Low-mod./ F |
| DN423 | F | 1880-1940s | Mod. | Mod./F, BD |
| DN424 | F | 1880-1940s | Mod. | Mod./F, BD |
| DN428 | F | 1870-1940 | Mod. | Mod./F, BD, EO |
| DN429 | F | 1870s-1940s | Mod. | Mod./F, BD, EO |
| DN430 | F | 1890s-1950s | Mod. | Mod./F, BD |

1 Site number preceded by 41 (e.g., 41DN43/44).
2 C=cemetery; F=farmstead; S=scatter.
3 BD=known subsurface deposits; EO=early occupation date; F=surface features; SO=short occupation.

Because many of the components recorded in the project area were adversely impacted, few exhibited potential for yielding significant information or National Register eligibility. Sixteen, including thirteen farmsteads, two scatters, and one cemetery were recommended for further work. In some instances, historic scatters were recommended because they yielded early MBD values and field observations suggested the potential for buried deposits. An overview of these components is presented in Table 4.2.

Testing was conducted at these 16 sites in 1988 and the results are presented in Brown and Lebo (1990). Three sites were recommended for mitigation based on the testing data. These sites (41DN401, 41DN404, and 41DN429) have archaeological integrity and exhibit potential for addressing the major research questions outlined earlier in this chapter and in the research design (Ferring and Lebo 1988). Each of these sites exhibit intact surface and subsurface features, well-preserved artifact deposits, minimal or no disturbance, and can be used for making intrasite, intersite, and inter-reservoir comparisons with farmsteads at Ray Roberts Lake, Joe Pool Lake, and the Richland-Chambers Creek reservoirs, thereby broadening our understanding of late nineteenth century and early twentieth century occupations in the region.

In summary, the most commonly identified historic sites in the project area are farmsteads dating between the 1870s and the 1940s. Historical research and archival background of the region indicate that initial settlement began in the early 1840s with the establishment of the Texas Emigration and Land Company, later known as the Peters Colony. The first settlement in Denton County was located in the southeast corner of the county at Bridges Settlement, established in 1843 or 1844.

Numerous communities were established in the 1840s and 1850s. The primary occupation of residents in Denton County was subsistence farming. With the exception of Grayson County, cotton was relatively unimportant during this period. Most of the land in the county was patented by 1870. Farm size increased during the late nineteenth century, and tenant farming became common. By 1900, half of all farmers were tenants. During the twentieth century, farm size continued to increase, but by the 1920s, the number of farms began to decrease, and rural migration to the cities was increasing steadily.

# CHAPTER 5

# HISTORIC BACKGROUND

by
Susan A. Lebo

## Early Exploration: ca. 1500-1830

Spanish explorers crossed Northcentral and East Texas centuries before the first major Anglo colonization effort in southern Texas by Moses S. Austin. The Hernando de Soto expedition, led by Luis de Moscoso de Alvorado after de Soto's death, purportedly passed through Pilot Point in 1542 on the way back to Mexico. The exact course followed by Moscoso's group is still a matter of historical debate (Reese, Pegues, and Yates 1988; Skinner et al. 1982a).

According to Richner and Bagot (1978:77), the Spanish claimed East Texas in the late 1500s, but did not attempt to control it until 1685 when the French moved from Louisiana into Spanish Territory. The Spanish were primarily interested in locating precious metals, and because gold and silver were not found in East Texas, the Spanish were not active there. But in 1685 they established missions to convert the indigenous population to serve as a buffer to stop French encroachment. However, no Spanish settlements were established in the Upper Trinity River Basin, near the project area.

French exploration was more extensive in Northcentral Texas than that of the Spanish. An expedition headed by Athanase de Mezieres traveled through the region in the 1760s and 1770s (Skinner et al. 1982a, b). The French were interested in establishing trade relations with regional Native American groups, including the Caddo, Wichitas, Delaware, Kickapoo, Kichai, and Shawnee. Several of these groups, including the Wichitas, had entered the region from other parts of the United States in the 1700s (Newcomb 1961; Reese, Pegues, and Yates 1988; Skinner et al. 1982a, b).

## Historic Settlement: ca. 1830-1870

### Settlement

Anglo settlers were in the Denton area as early as the 1830s, and a military outpost was situated three miles southwest of there. Several major overland routes crossed the area, including the California Trail which ran east-west through Cooke County. A second trail, the Chihuahua Trail, was used primarily in 1839 and 1840 (Skinner et al. 1982a, b). In 1838, the Texas Congress authorized establishment of a military road, the Central National Road (now called Preston Road). It ran from Dallas to the Red River at Preston's Bend. It followed the north-south ridge between the Elm Fork and East Fork of the Trinity River near the Collin-Denton County line, about one mile east of Denton County. It provided new immigrants with an improved transportation route through Northcentral Texas (Bridges 1978; Odom and Lowry 1975).

As settlers immigrated to the area, skirmishes occurred with Native American groups in the region. By the 1840s, efforts were underway to force all Native Americans out of the Upper Trinity, opening the area for Anglo settlement (Reese, Pegues, and Yates 1988). Colonists began homesteading along major waterways (such as the Elm Fork of the Trinity) in the Blackland Prairies and around the southern edge of the Cross Timbers. This settlement was initiated when the government of the new Republic of Texas began searching for a way to alleviate the financial strain brought on by their fight for independence. A variety of measures were initiated to encourage immigration.

Colonization in the project area occurred after W.S. Peters of St. Louis and 19 other men petitioned the Congress of the Republic of Texas on February 4, 1841, for a land grant. Their company, the Texas Emigration and Land Company, became known as the Peters Colony (Connor 1959).

The Texas Emigration and Land Company established an office in southeast Denton County in 1843 (Odom and Lowry 1975). Although chiefly motivated by financial concerns, they were directly responsible for promoting much of the immigration to the area (Ferring and Reese 1982). Four separate contracts were negotiated with the Texas Government by the Texas Emigration and Land Company (Figure 5.1). The first contract, made in 1841, includes the Lewisville Lake project area. Located in the Cross Timbers zone, this included the area from what is now the southern boundary of Denton County to the Red River, the eastern half of Denton and Cooke counties, the western third of Grayson County, and a small portion of Collin County (Connor 1959; Ferring and Reese 1982). The second contract was signed on November 9, 1841, extending the colony lands westward to encompass the three forks of the Trinity, and the third, signed July 26, 1842, extended the colony farther west and east. The fourth contract was signed on January 16, 1843, and contained over 10 million acres of land for colonization.

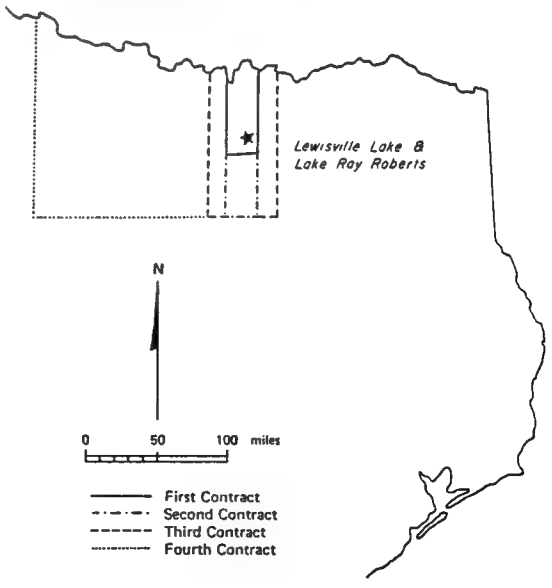



Figure 5.1 The location of the four land contracts signed by the Peters Colony in the 1840s.

The Texas Emigration and Land Company was responsible for surveying the sites and providing assistance in house construction. In return, they could retain up to half a settler's land. The land titles were issued to the company agents rather than to the settlers themselves (Ferring and Reese 1982). This led to hostility between the company and the settlers which culminated in the "Hedgcoxe War" in 1852. Following protests, the law granting the Texas Emigration and Land Company half the settler's land was repealed, and the company was compensated with 1,088,000 acres of vacant land within the colony (Lowry 1980). This angered the settlers, and during the summer of 1852, the office of Henry O. Hedgcoxe, agent for the land company, was raided and burned.

The Peters Colonists, primarily Anglo-Americans from the Upper South, chose their land according to the availability of water, wood, and arable farmland. The settlers were overwhelmingly farmers from central and western Missouri, including the northern Ozarks, south-central Kentucky, and middle Tennessee. They settled primarily east of the Balcones Fault on the Blackland Prairies, where agricultural potential was good. West of this area, soils and climate in the Eastern Cross Timbers combined to create an area more suited to ranching. The 1850 census (U.S. Bureau of Census, 1850:Population) indicates that 94 of the 101 individuals who listed their occupations in Denton County were farmers, while 49 of 50 in Cooke County and 182 of 224 in Grayson County were farmers.

In the six-county area including Collin, Cooke, Dallas, Denton, Grayson, and Tarrant counties, the first land settled by the Peters Colonists was in Grayson, Collin, and Dallas counties. About 25% of the land in Grayson County was claimed by veterans and other citizens of Texas before the arrival of the Peters Colonists. Collin County had 12% of its land claimed before 1840, while 3.2% of the land in Dallas County was claimed or occupied. Settlers migrated to the first available farmland they found, in this case Dallas County. As immigration increased and less land was available for new settlement, the immigrants began farming in the more northern and western counties. In general, as colonization spread westward, land holdings were larger because of the ecological and agricultural factors mentioned earlier (Williams 1969).

Good, tillable land was available in Cooke, Denton and Tarrant counties, but routes into these areas were poor, hindering settlement. The route used by most early colonists took them west to Fort Smith, by Fort Towson, into Indian Territory, and then across the Red River around Preston's Fort (Williams 1969).

Denton County, originally part of Red River County under the Mexican Government, was incorporated in 1837 as a section of Fannin County. In 1846, by an act of the first Texas Legislature, it was made a separate county along with 30 others (Skinner et al. 1982a). The first settlement in Denton County was Bridges' Settlement, later Hebronville, established in 1843 (Bates 1918; Odom and Lowry 1975). "This settlement was partly in Denton County, partly in Collin County, and partly in Dallas County" (Bates 1918:27). The Peters Colony (Texas Emigration and Land Company) land office was located here, along with a settlers' store (Figure 5.2).

Bridges' Settlement expanded, and its western edge became Holford Prairie in 1844, located on the headright grants of John and Augustus King who came to the area in 1843. In 1855, it was sold to Basdeal Lewis, the town was laid out, and it was called Lewisville (Reese, Pegues, and Yates 1988). Other early settlements include Stewarts Creek, in 1844; Teel (northeast of the project boundary) in 1850; Ritters Lake (now under Lewisville Lake) in 1844; and Pilot Point in 1845 (Bates 1918; Odom and Lowry 1975; Bridges 1978). Denton was established in 1857 (Bridges 1978).

In 1847, the Peters Colony administrators resumed national advertising to attract new homesteaders. This advertising resulted in a boost in the population. Between 1847 and 1848, almost 1,300 settlers arrived, including the return of 60 to 70% of the colonists who had left two years earlier. Within a few years a number of new communities were established.

The first county seat of Denton County was established in 1846 at Pinkneyville, about one mile southwest of the present location of Denton on Pecan Creek. It was abandoned because of its distance from the bulk of the population in the southeast corner of the county. The county seat was moved four miles south to Alton in 1848, on the fringe of the project area, but this site was abandoned because of water shortages. The third site chosen was in the Alexander E. Cannon homestead on Hickory Creek, five miles south of present-day Denton. The first courthouse in the county was built there in 1851, and it was given the name of Old Alton. It was moved for the last time in 1857 to Denton (Bridges 1978; Odom and Lowry 1975).

Old Alton [sometimes referred to as New Alton, Second Alton] was established in 1851 and was located a short distance down Hickory Creek from the original community of Alton [sometimes refered to as Alton, New Alton, and Old Alton] and just southeast from the point where the Old Fort Worth Highway crossed the creek about 6 miles south of Denton (Bridges 1978). The Old Alton or Hickory Creek Cemetery was established there in 1852 and is located on the west margin of the study area, adjacent to the Cranston Pottery Kiln Site (41DN16).

Shortly after Old Alton was started, the post road and stage line from Sherman through Little Elm to Birdville was moved to serve Old Alton (Bates 1918). In 1856, a mail route was started that ran between Old Alton and Taylorsville (later called Decatur) in Wise County (Bridges 1978). Early establishments at Old Alton included a courthouse (1851), post office (1851), first of several stores (1851), a school (1852), a church (1855), a hotel (1855), a blacksmith shop (1856), the Cranston Pottery kiln (ca. 1854), and the Hickory Creek Cemetery (Bridges 1978).

The Town of Little Elm (east side of Lewisville Lake) was established with mail service in 1845 (Bridges 1978; Lowry 1980). The post office was on the mail route between Preston and Birdville. The town was named for a nearby creek and was formed by the consolidation of the Lloyd, Hackberry, Dickson, and Hilltown settlements (Lowry 1980:15). The first store in Little Elm was established in 1859. The Little Elm Cemetery was established in the late 1800s and is discussed in Appendix E.

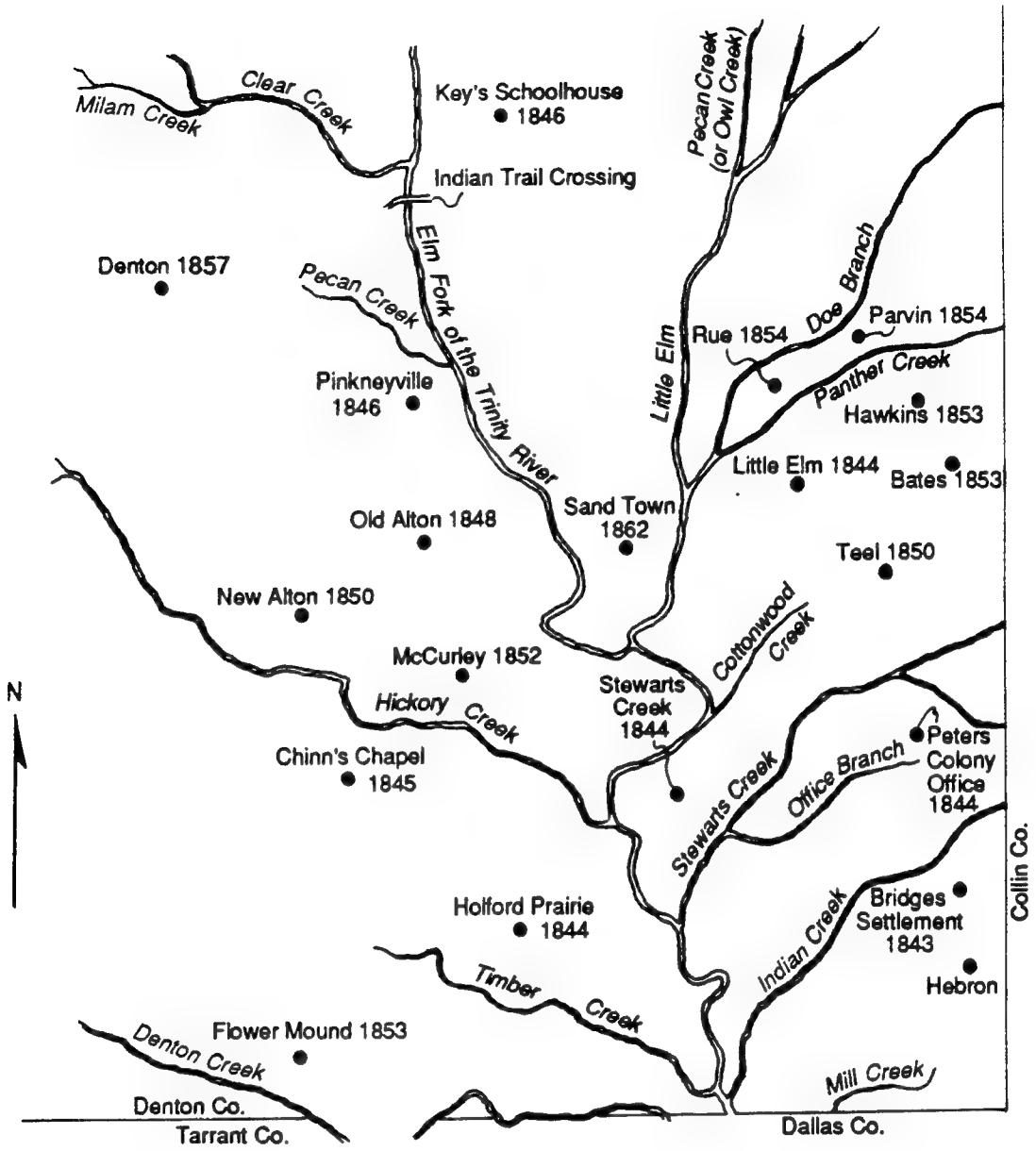



Figure 5.2 Distribution of early settlements in southeastern Denton County.

During the 1850s, settlement in Denton County moved west of the Lewisville project area, and southwest of the Ray Roberts project area. New communities were established at Frenchtown (1852), Hawkins (1853), Rue (1854), Denton Creek (now called Stony) in 1854, Ballew in 1856, Denton in 1857, Keys Community (1858), and Bolivar in 1859 (Bridges 1978). In 1856, agents of the Peters Colony also moved their main office from near Farmer's Branch to Office Creek, just north of the present town of Hebron (Bridges 1978).

### Transportation

The 1850s were a time of great change throughout the Upper Trinity region. Northcentral Texas was the fastest growing region of Texas during the late antebellum period (Lowe and Campbell 1987). Colonists filled most of the vacant lands in the project area and had begun extending to new, unclaimed lands in the western portion of Denton County. Urban centers were developing during this period and rural communities were in their earliest stages of development. Transportation networks improved, and rough trails were being shaped into roads. Many of the ferries listed as historic localities date to this period. In 1854, Alexander Cockrell built the first bridge spanning the Trinity River, connecting east and west Dallas. The Fort Worth to Yuma stageline began operations in 1856, and by 1858 several more were in existence (Reese, Pegues, and Yates 1988).

The 1850s also saw the first large-scale attempt to navigate the Trinity River. Prior to this period, freight wagons were the chief means of transporting goods and services between this area and eastern and southern Texas market centers. By 1860, nine individuals in Denton County listed their primary occupation as teamster, along with five wagonmakers and one wheelwright (Table 5.1).

Table 5.1

Primary Occupations Recorded in the 1860 Census for Denton County[1]

| | | | | | |
|---|---|---|---|---|---|
| Artist | 1 | Farmer | 1055 | Potter Hand | 1 |
| Blacksmith | 20 | Grocer | 8 | Saddler | 2 |
| Brick Layer | 1 | Hireland | 30 | Sheriff | 1 |
| Brick Maker | 2 | Hotel Keeper | 2 | Shingle Maker | 1 |
| Brick Mason | 1 | Lawyer | 3 | Shoe/Boot Maker | 1 |
| Cabinet Maker | 9 | Mail Carrier | 2 | Stone Mason | 2 |
| Carpenter | 32 | Merchant | 20 | Student of Med. | 1 |
| Clergy | 5 | Miller | 6 | Surveyor | 5 |
| Clerk in Store | 12 | Millwright | 2 | Tailor | 1 |
| County Clerk | 2 | Painter (house) | 2 | Teamster | 9 |
| Day Laborer | 1 | Peddler | 1 | Wagonmaker | 5 |
| Dentist | 1 | Photographer | 1 | Wheelwright | 1 |
| Druggist | 3 | Physician | 22 | Wool Carder | 1 |
| Farm Labor | 15 | Potter | 7 | Unknown | 5 |

1 Compiled from U.S. Bureau of Census, 1860: Population.

Small keel and flat boats sporadically serviced early settlements on the Trinity. Small steamers appeared on the Trinity River in the 1830s and reached the Upper Trinity by 1842 (Sciscenti 1971; Richner and Bagot 1978). Cotton was the major cargo carried downstream followed by cattle, other livestock, and deer hides (Brown 1930). Steamers travelling upstream carried staples and manufactured goods including sugar, molasses, coffee, whiskey, flour and clothing (Richner and Bagot 1978:101).

While many thought the Trinity River was the most navigable stream in Texas, navigation was not passible many months of the year, and in 1852, the "Dallas" became the first of a long line of ships to sink in the Trinity. The "Dallas" was enroute to the coast and took three months to reach Porter's Bluff near present-day Corsicana, where it was forced to turn around due to low water. It hit a snag and sank on the return trip (Greene 1973; Reese, Pegues, and Yates 1988).

### Food Production

While this region of Texas was capable of producing vast quantities of cotton and wheat, commercial agriculture was relatively unimportant before the Civil War (Lowe and Campbell 1987). Table 5.2 shows agricultural property and production for Region III, 32 northern and central prairie counties in 1850 and 1860 (Figure 5.3).The northcentral plains, Region III [including the Lewisville project area], grew more rapidly (in number of farms) than any of the other areas of Texas during the 1850s. This region became the state's second-leading cattle, hog, and corn producer and remained the largest wheat-growing area in the state (Lowe and Campbell 1987:30, 34).

While over half of the state's wheat was grown in this area, cattle, hogs and corn were raised primarily for home consumption. Wild game was plentiful, including prairie chickens, quail, turkey, ducks, geese, deer, and antelope. Buffalo were also hunted. They were numerous in the 1830s, but were pushed farther west as the frontier moved westward. "Until the early 1870's, hunting parties from Denton and the surrounding area went into the buffalo regions of West Texas and returned with hides, meat and thrilling stories of their experiences" (Bridges 1978:36).

Table 5.2

Agricultural Property and Production for Region III of Texas, 1850 and 1860[1]

| | 1850 | 1860 | Total |
|---|---|---|---|
| Number of Farms | 2,440 | 9,337 | 11,777 |
| Number of Improved Acres | 84,019 | 503,315 | 587,334 |
| Dollar Value of Farms and Implements | 2,284,295 | 24,272,613 | 26,556,908 |
| Number of Cattle | 105,500 | 683,132 | 788,632 |
| Number of Hogs | 118,231 | 312,159 | 430,390 |
| Dollar Value of Livestock[2] | ----- | 15,422,742 | 15,422,742 |
| Bushels of Wheat | 26,806 | 1,078,096 | 1,104,902 |
| Bushels of Corn | 557,175 | 2,965,304 | 3,522,479 |
| Bushels of Irish and Sweet Potatoes | 91,637 | 173,988 | 265,625 |
| 400-pound Bales of Cotton | 2,095 | 18,438 | 20,533 |
| Dollar Value of Animals Slaughtered | 145,944 | 1,264,893 | 1,410,837 |

1 Location of geographical regions is shown in Figure 5.3; From Lowe and Campbell (1987:Table 1 and Table 2).
2 Not available in the published census returns for 1850.

Smaller game included rabbits, fish, and squirrels. Farm animals included pigs, hogs, chickens, turkeys, goats, cows, sheep, and horses. Wild plants supplemented farm gardens and orchards. Wild plums, grapes, persimmons, nuts, berries, and honey were foraged. Pecans were the most common nuts, and less important types included black walnuts and hickory nuts. Blackberries and dewberries were common, while strawberries, elderberries, and mulberries were less abundant. Staple farm crops included wheat, corn, sorghum, cabbage, turnips, sweet potatoes, beets, mustard, peppers, beans, and onions. Pumpkins, cushaws, watermelons, cucumbers, citrons (pie melons), and beans were planted among the corn. Common plants utilized by settlers include Lamb's quarters, dandelions, sheep sorrel, volunteer mustard, poke weed, and wild onions (Bridges 1978). Gourds were also cultivated. Few foodstuffs were imported, the most common was probably coffee.

> A family garden was about one-quarter acre in size... The family flock of hens ranged from twenty to one hundred, depending on family size and income. Dairy cows, usually one or two per family, provided milk and, of course, butter. Pork came from hogs raised at home; families killed and butchered about four to eight hogs per year... Some farmers took wheat and corn to a local mill for grinding. The miller's share was usually half, a practice that reduced the need for cash. Women put fruit and vegetables in jars and stored them in a cellar or

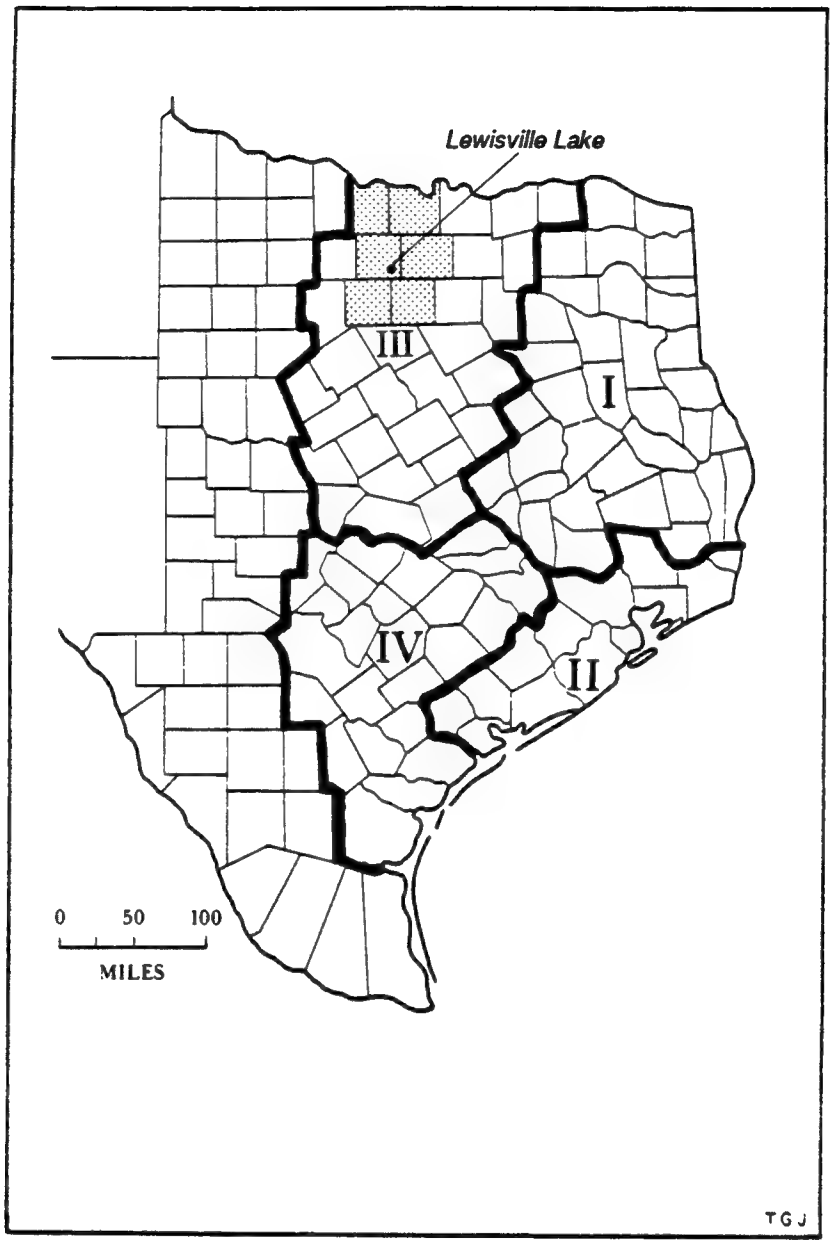



Figure 5.3 The location of Region III in Texas and the Lewisville Lake project area (Adapted from Lowe and Campbell 1987; original drawn by Terry G. Jordan, Department of Geography, University of Texas at Austin).

storeroom. Potatoes were usually spread out in a dry spot on top of straw. Dry areas underneath the house were popular for potato storage (Brown 1986:17).

An overview of the major crops for a six county area of the Peters Colony in 1870 is provided in Table 5.3. These counties include Collin, Cooke, Dallas, Denton, Grayson, and Tarrant.

Table 5.3

Agricultural Produce for Six County Area in 1870[1]

| | Collin | Cooke | Dallas | Denton | Grayson | Tarrant |
|---|---|---|---|---|---|---|
| Bushels | | | | | | |
| Spring Wheat | 11,314 | 3,509 | 2,444 | 8,741 | 4,234 | 3,988 |
| Winter Wheat | 31,513 | 12,724 | 58,318 | 9,475 | 35,534 | 25,599 |
| Rye | 438 | 19 | 511 | 406 | 719 | 48 |
| Indian Corn | 674,565 | 211,939 | 557,508 | 173,510 | 577,540 | 203,595 |
| Oats | 123,325 | 51,743 | 104,892 | 41,060 | 113,241 | 72,635 |
| Barley | 118 | 510 | 154 | 190 | 963 | 50 |
| Cane Sorghum | 12,291 | 4,785 | 14,81 | 35,152 | 9,301<br>10,044 | 10,896 |

1 Compiled from U.S. Bureau of Census, 1870: Agriculture.

Cotton was a relatively unimportant crop in the Grand Prairies region before the Civil War. "By 1860,... cotton farming was being extended into central Texas, even though the notion still prevailed that it was a bottomland crop not suited to the black prairies" (Richardson, Wallace, and Anderson 1988:181). Production figures for the six county area in 1860 are presented in Table 5.4.

Table 5.4

Cotton Production for Six County Area in 1860[1]

| | Bales |
|---|---|
| Collin | 16 |
| Cooke | 58 |
| Dallas | 0 |
| Denton | 2 |
| Grayson | 220 |
| Tarrant | 0 |

1 Taken from Kerr (1953: Table 10); U.S. Bureau of Census, 1860: Agriculture; 400 lb. bales.

Data on farm size is provided in Table 5.5 for a six county area of the Peters Colony based on the 1870 census (U.S. Bureau of Census, 1870: Agriculture). While the median farm size in each county was 20 to 49 acres, the mean farm size in Grayson, Collin, and Dallas counties, the three counties settled first, was less than in Cooke, Denton, and Tarrant counties. The means for the first group ranged between 51% and 66%, while the range was between 73% and 80% for the second group.

Table 5.5

Farm Size for Six County Area in 1870[1]

| | Collin | Cooke | Dallas | Denton | Grayson | Tarrant |
|---|---|---|---|---|---|---|
| FarmSize (acres) | | | | | | |
| Under 3 | | | | 13 | 1 | |
| 3 to 9 | 5 | 51 | 46 | 34 | 9 | 43 |
| 10 to 19 | 80 | 121 | 273 | 129 | 70 | 99 |
| 20 to 49 | 387 | 282 | 580 | 255 | 345 | 246 |
| 50 to 99 | 314 | 89 | 318 | 117 | 268 | 95 |
| 100 to 499 | 116 | 25 | 146 | 18 | 133 | 50 |
| 500 to 999 | 1 | | | | | 1 |
| 1000 + | | | | | | |
| All Farms | 903 | 568 | 1,363 | 566 | 826 | 534 |

1 Compiled from U.S. Bureau of Census, 1870: Agriculture.

"After the War with Mexico, the range cattle industry spread into the vast prairie region marked today by such cities as Dallas, Fort Worth, and Denton. John Chisum...owned a herd in Denton County during this period" (Richardson, Wallace, and Anderson 1988:284). By 1860, two cattle-ranching clusters had developed in the state, including the Cross Timbers region (Jordan 1981:126). The population to cattle ratio for Cooke County was between 1:6 and 1:9, and between 1:2 and 1:5 for Denton and Grayson counties, indicating that by 1860, Cooke County was a major cattle raising county in the Cross Timbers area. Figures available for Denton County between 1857 and 1861 indicate the importance of livestock in this area (Table 5.6).

Table 5.6

Livestock in Denton County Based on Figures from County Tax Assessor's Office (Bridges 1978:86)

| Year | Cattle | Horses | Sheep | Total |
|---|---|---|---|---|
| 1857 | 16,774 | 1,568 | | 18,342 |
| 1860 | 36,000 | 4,222 | 11,633 | 51,855 |
| 1861 | 48,628 | 5,807 | 20,886 | 75,321 |

Trail drives, used occasionally before the Civil War, became economically important after the war. Major trails between 1865 and 1890 include the Chisolm (1867-1884), Great Western or Dodge City (1876-mid 1890s), Shawnee (1850-1873, although not important until 1866), Goodnight-Loving, and Sedalia and Baxter Springs (Hooks 1979; Richardson, Wallace, and Anderson 1988). The Chisolm and Sedalia and Baxter Springs Trails were important in the Cross Timbers region of the study area. The Chisolm Trail passed through Fort Worth, while the Shawnee Trail (1850-1873) went through Dallas.

## Industries

Early settlers were largely self-sufficient, and industries were operated on a seasonal basis by individuals whose primary occupation was farming. During the 1850s, the population of the Peters Colony doubled, and small commercial enterprises were established in both rural and urban settings. Among these were grain and flour milling, cotton ginning, blacksmithing, brick making, and wagon and carriage making. The establishment and importance of these enterprises is shown in the list of occupations (see Table 5.1) from the 1860 census (U.S. Bureau of Census, 1860: Population).

By 1860, 41 types of manufacturing establishments existed in Texas. Among these were local manufacturers of agricultural implements, beer, bread, brick, firearms, furniture, patent medicines, pottery, saddles, steam engines, cotton gins, and whiskey (Dugas 1955:154). Mills and gins were established up and down the Trinity River and it's tributaries, including Denton, Holford Prairie (Lewisville), and Pilot Point.

An ox-tread grist mill was built near the Lewisville project area in the early 1860s. It was situated a short distance from the square on the west side of North Elm Street in Denton by Peter Teel and G.M. Teel. The Teels were one of the early families to settle in the Lewisville Lake project area.

In 1865, the Teels sold the mill and the lot on which it was located to Mrs. M.E. Mounts. A short time later I. N. Hembree and O. M. Keith purchased the property, and Hembree moved the mill to his home on Duck Creek north of Bolivar. This mill was a very small affair and probably was not in operation very long, but apparently it was Denton's first industrial venture. During these earlier days, many of the people of Denton and southeastern Denton County had their milling done at Witt's Mill, later and better known as Trinity Mills on the Trinity River just above Carrollton (Bridges 1978:87).

Several early cotton gins were established in the Lewisville project area during the 1860s, including one owned by J.M. Clayton, reportedly the first cotton gin in Denton County. Based on data from several articles in the Denton Record Chronicle, Bridges (1978:121) reported that this gin was established at Lewisville (formerly Holford's Prairie) in the season of 1867-1868. The gin,

> was a one-stand treadmill affair with fifty saws and the old-fashioned "knee-press." Its capacity was two bales per day, but with extra effort, long hours, and good luck, sometimes three bales could be done.

Another early gin was located near the south end of Bernard Street on the outskirts of Denton in 1869. It was built by W.C. Baines and was operated by jennets and a whimp or capstan device that supplied the power for running the machinery. The gin was replaced by a larger and faster gin around 1870 by Captain C.C. Scruggs who built a gin on the bank of Pecan Creek on the north side of McKinney Street about a block east of the railroad crossing. Soon after, a corn mill was added to the gin operation. It was powered by animals and later changed to steam power. The mill operated for 14 or 15 years.

Sawmills were frequently combined with a grist mill or general store. Mills located in the Texas interior, including the study area, did not have easy access to gulf ports and served mostly local needs since transportation costs were prohibitive (Dugas 1955; Maxwell 1964, 1982). Lumber was "as high as sixty and seventy dollars per thousand feet and was often hauled hundreds of miles by ox team" (Dugas 1955).

By 1860, a small number of individuals in Denton County listed their primary occupation as miller or millwright (see Table 8.1). These occupations also appear in the 1870 census (Table 5.7) for Denton County (U.S. Bureau of Census, 1870: Population). Data on manufacturing for 1860 (U.S. Bureau of Census, 1860: Manufacturing) indicate that flour and grist milling was the third largest industry in Denton County.

These data indicate the establishment and importance of rural and urban industries during the late 1850s and the 1860s, included carriage and wagon making, brick making, pottery making, saddlery, carpentry, and blacksmithing. One industry, pottery production, was established in Denton County where suitable clays were available, but did not occur in the immediately surrounding counties. Seven potters and one pottery hand are listed in the 1860 census (U.S. Bureau of Census, 1860: Population) for Denton county (see Table 5.1), and seven potters are listed for 1870 (U.S. Bureau of Census, 1870: Population).

Table 5.7

Primary Occupations Recorded in the Census for Denton County in 1870, Excluding Farm Laborers and Farmers[1]

| | | | | | |
|---|---|---|---|---|---|
| Apothecary | 2 | Clerk in Store | 7 | Miller | 4 |
| Bartender | 1 | Cooper | 1 | Millwright | 2 |
| Blacksmith | 18 | County Treasurer | 1 | Nurse | 3 |
| Blacksmith & Wheelwright | 4 | Day Laborer | 40 | Painter | 4 |
| Board Maker | 1 | Dentist | 1 | Physician | 24 |
| Brick Layer | 1 | District Clerk | 1 | Potter | 7 |
| Brickyard Worker | 2 | Druggist & Preacher | 1 | Private House-keeper (male) | 1 |
| Butcher | 1 | Dry Goods Clerk | 1 | Runs Cotton Gin | 1 |
| Cabinet Maker | 3 | Merchant | 21 | Saddler/Saddle Tree Maker | 10 |
| Cabinet Maker & Preacher | 1 | Engineer | 2 | School Teacher | 18 |
| Carpenter & Machinist | 1 | Grocer | 2 | School Teacher & Preacher | 2 |
| Cattle/Stock Driver | 49 | Grist Mill Worker | 1 | Seamstress | 1 |
| Herder | 24 | Gunsmith | 1 | Servant | 33 |
| Raiser | 43 | Hatter | 1 | Student | 2 |
| Raiser & Dry Goods Merchant | 1 | Horse Breeder & Justice of Peace | 1 | Student of Law | 1 |
| Trader | 13 | Horse Herder | 1 | Surveyor | 1 |
| Chair Maker | 2 | Horse Raiser | 2 | Teamster | 19 |
| Clergy | 10 | Horse Trader | 1 | Waggoner | 22 |
| | | Housekeeper | 29 | Wagon Maker | 2 |
| | | Lawyer | 3 | Washer Woman | 3 |
| | | Liquor Dealer | 1 | Weaver | 1 |
| | | Machinist | 2 | Wheelwright | 1 |
| | | Mail Carrier | 1 | | |
| | | Mechanical Engineer | 1 | | |

[1] Compiled from U.S. Bureau of Census, 1870: Population.

An overview of the major industries in the six county area during the 1850s is shown in Table 5.8. There were no returns for Tarrant County. Data for Denton County industries is provided in Table 5.9.

Table 5.8

Manufacturing in Five County Area in 1860[1]

| | Collin | Cooke | Dallas | Denton | Grayson |
|---|---|---|---|---|---|
| # Establishments | 17 | 7 | 15 | 10 | 37 |
| Capital Invested | 43,400 | 17,975 | 89,000 | 22,500 | 66,000 |
| Cost of Raw Material | 57,368 | 38,670 | 227,150 | 79,653 | 137,156 |
| Number of Hands Employed | 35 | 20 | 62 | 21 | 86 |
| Annual Cost of Labor | 12,180 | 4,980 | 22,620 | 5,340 | 27,072 |
| Annual Value of Products | 87,149 | 59,465 | 341,239 | 97,890 | 201,813 |

1 Compiled from U.S. Bureau of Census, 1860: Manufacturing; No returns for Tarrant County.

Table 5.9

Manufacturing Data for Denton County in 1860[1]

| | Agr. Imple. | Boots & Shoes | Flour Meal | Furn. & Cabinets | Saddlery Harness |
|---|---|---|---|---|---|
| # Establishments | 3 | 1 | 4 | 1 | 1 |
| Capital Invested | 1,800 | 800 | 13,400 | 6,000 | 500 |
| Cost of Raw Material | 1,330 | 568 | 76,000 | 1,380 | 375 |
| Number of Hands | 8 | 2 | 8 | 2 | 1 |
| Annual Cost of Labor | 1,920 | 600 | 1,920 | 600 | 300 |
| Annual Value of Products | 3,250 | 1,700 | 89,340 | 2,350 | 1,250 |

1 From U.S. Bureau of Census, 1860: Manufacturing.

### Civil War

An overview of slave and nonslaveholding populations in Region III is shown in Table 5.10. Less than 18% of the population in the region owned slaves in 1850, and about 20% in 1860. Slavery was not a burning issue in Denton County. "The slightly more than 5,000 population in the county in 1860 included only about 250 slaves. Still, most of the pioneers had come from southern or border states, and the sympathy of the county went reflexively to the Secessionists" (Odom and Lowry 1975:5). Many supported the Confederacy not because of the slavery issue, but because of a strong belief in the right to secede. The decision to secede passed in Denton County with 331 for, and 256 against (Odom and Lowry 1975:5).

Eight companies were formed, and a thousand men enlisted from Denton County (Bates 1918:98). According to Bridges (1978:97), Denton County troops entered the Confederate Calvary and served in the Indian Territory, the Missouri-Arkansas campaigns, and the Tennessee-Mississippi campaigns. Home guards were organized of boys under military age and old men. They served as the basic law enforcement in the county between 1861 and 1868.

Table 5.10

Slave and Nonslave Populations of Region III in Antebellum Texas, 1850 and 1860[1]

| | 1850 | | 1860 | |
|---|---|---|---|---|
| | N | % | N | % |
| Slaveholding Farmers with Farms | 136 | 16.5 | 233 | 16.8 |
| Slaveholding Farmers without Farms | 3 | 0.4 | 20 | 1.4 |
| Nonslaveholding Farmers with Farms | 517 | 62.6 | 614 | 44.2 |
| Nonslaveholding Farmers without Farms | 99 | 12.0 | 274 | 19.7 |
| Slaveholding Nonfarmers | 6 | 0.7 | 23 | 1.7 |
| Nonslaveholding Nonfarmers | 65 | 7.9 | 226 | 16.3 |
| Total | 826 | 100.1 | 1,390 | 100.1 |

1 Location of geographical regions is shown in Figure 5.3; From Lowe and Campbell (1987:Table 3).

The effect of the War for Southern Independence was immediate and in some ways disastrous. The last years of the war were years of depression and prostration, so desolating were the effects of the long struggle. Occasionally a Confederate trading vessel was able to "run the blockade," but at Denton the markets were nearly destroyed, and some desirable items such as coffee and sugar were almost completely unobtainable. Laborers--farmers, cowboys, and other workers--were drawn into the military forces, and home businesses, services, and industries were left unmanned. Many fields, ranches, and farms were abandoned (Bridges 1978:97).

Industrial development in Texas was dramatically curtailed by the Civil War. For example, cotton production decreased from 345,170 bales in 1860 to only 280,502 bales in 1869. It was not until the early 1870s that many industries regained prewar levels of production.

## Post-Civil War:1870-1900

### Settlement

Indian uprisings were a constant fear during the 1860s, but did not become a problem until after the Civil War when former Confederate military posts were abandoned, citizens were disarmed, and protection was furnished by ineffective Federal troops. From 1866 to 1873, Denton experienced it most furious and dangerous period of Indian Wars (Bridges 1978:98).

Anglos and African-Americans from the Lower South immigrated to the area after the Civil War. Early African-American settlers established rural settlements in northeastern Denton County during this period. They also established a community in the town of Denton about 1875, when a group from Dallas County moved and founded the community of Freedmanstown, a few miles from the county courthouse (Jordan 1977).

Midwestern Anglo-Americans, principally from Illinois and Indiana, and European-born groups who had resided a

decade or more in the Midwest or in settlements in south-central Texas, immigrated to Cooke, Denton, and Grayson counties from the 1870s to early 1900s (Jordan 1977).

While by 1870, most of the land in Denton County was patented, some land was still available through homesteading or outright purchase. A boom occurred in this region, including the establishment of new communities supported by military aid and the coming of the railroads. The railroads created new markets for crops and other goods produced in the Lewisville area. The economic crisis of 1873 slowed railroad completion and stunted agricultural expansion temporarily (Skinner et al. 1982a). Towns in the six county area with a population over 500 in 1880 are listed in Table 5.11.

Table 5.11

Towns in Six County Area With a Population Over 500 in 1880[1]

| Town | County | Population |
|---|---|---|
| Dallas | Dallas | 10,358 |
| Denison | Grayson | 4,500 |
| Denton | Denton | 4,335 |
| Ft. Worth | Tarrant | 6,668 |
| Gainesville | Cooke | 5,785 |
| McKinney | Collin | 1,578 |
| Pilot Point | Denton | 964 |
| Sherman | Grayson | 9,246 |
| Whitesboro | Grayson | 800 |

1 From 1882 Burke's Texas Almanac:132-133.

## Transportation

Railroad lines in Northcentral and East Texas tripled between 1870 and 1880. The Houston and Texas Central reached Dallas in 1872 (Acheson 1977) and by 1877 was part of a completed track from Galveston to Chicago. In an effort to ensure an east-west line of the Texas and Pacific, Dallas secured state legislation and offered land and bonds (Reese, Pegues, and Yates 1988). This line reached Dallas in 1873 but was not completed to Fort Worth until 1876. The population and economy of Fort Worth declined during the three year delay in completing the railroad.

Towns that developed between Dallas and Denton along the Houston and Texas Central are Letot, Farmers Branch, Carrollton, Trinity Mills, and Lewisville. Towns between Dallas and Fort Worth on the Texas and Pacific line are Eagle Ford and Grand Prairie (Reese, Pegues, and Yates 1988). Denton was on the line of the Southwestern Branch of the Missouri Pacific Railroad, Pilot Point had a railroad station, and Gainesville in Cooke County was on the western terminus of the Missouri, Kansas and Texas Railroad (Burke's Texas Almanac 1882).

In the 1870s, Dallas and Fort Worth began taking on something of the character they have today. Dallas is located in the Blackland Prairies, a major farming area, while Fort Worth lies in the Grand Prairies, and was originally established as a military post because of its desired defensive potential (Hooks 1979). Further, the agricultural potential near Dallas "...gave that town the opportunity to develop through trade with the farmers and the production of finished goods. On the other hand, the location of Fort Worth along a major cattle trail, as well as its proximity to ranches of West Texas, gave Fort Worth the edge in the cattle trade (Hooks 1979:143).

Dallas developed into a mercantile center and served as the chief distributing center for buffalo hides and cotton (Reese, Pegues, and Yates 1988). "The annual shipments of cotton from Dallas amount to 50,000 bales, and it is the largest grain shipping point in the State of Texas. Large quantities of hides are shipped from here, besides large amounts of general farm produce" (1882 Burke's Texas Almanac:49). A comparison of industries among Dallas and Fort Worth is provided in Table 5.12.

Table 5.12

Industries in Dallas and Fort Worth in 1882[1]

| Industry | Dallas | Fort Worth |
|---|---|---|
| Cement and Artifical Stone factories | X | |
| Cotton Compresses | 3 | 1 |
| Cotton Seed Oil Mill | 1 | |
| Flour Mills | 4 | 3 |
| Foundaries | 2 | |
| Grain Elevators | 2 | 2 |
| Grain Separator Manufactory | 1 | |
| Ice Factory | 1 | 1 |
| Planing Mills | 3 | 2 |
| Sash and Door Factory | | 1 |
| Soap Factory | 1 | |
| Steam Candy Factory | 1 | |
| Wagon and Carriage Factories | X | |

1 Compiled from 1882 Burke's Texas Almanac:49; X=no numbers provided.

The first cotton compress was built in Dallas in 1874, and the number grew to three in 1882. The first cottonseed oil mill began operation in 1877 and reportedly was the only one in the north half of the state. Five cotton gin manufacturing firms were established in the 1880s and six were operating in 1896. By 1910, two of the largest cotton gin factories in the world were located in Dallas, and the first was established in Fort Worth in 1877 (Hooks 1979:148-149).

Two cotton compresses were built in Fort Worth in 1877 and 1878, but only one remained in operation by 1882. A cotton seed mill was built in 1891, but no cotton gins or factories were established during this period. While Fort Worth could not compete with Dallas in the production of cotton gins, cotton compresses, gins, and seed mills, it became a major distribution point for cotton farmers in West Texas.

This same pattern occurred in the grain industry. Dallas became a major grain processing center and producer of grain mills. The first flour mill was built in 1872, six were in operation in 1878, along with several grain elevators, and companies producing mills. The first flour mill was established in Fort Worth in 1876 and four flour/grist mills

were operating by 1890. The growth of the industry in Fort Worth never rivaled that of Dallas, but the city was able to compete as a major distribution center for grain from West Texas (Hooks 1979:151-152).

## Cattle

During the early 1870s, Fort Worth, located along the Chisholm Trial, became an outfitting point for cattle drives and a shipping point for cowmen wanting to transport their cattle by rail. The Fort Worth Union Stockyards opened in 1890 (Hooks 1979). Cattle drives were important to the Texas economy after the Civil War (Table 5.13). Gainesville profited by being situated between the Chisholm Trail to the west and the Sedalia trail to the east. When the railroad reached Gainesville in 1879, it became a cattle boom town. Both Fort Worth and Gainesville ...

> stood in the path of the north-bound cattle trail, and after railroads reached them, the cattle driver could ship his cattle from these points or drive on as he chose. Denton was on the edge of the trail, but it had no railroad until 1881. By that time Denton had little or no advantage as a shipping point over a dozen or more other nearby railroad towns (Bridges 1978:169).

Table 5.13

Number of Head of Cattle in
Texas Cattle Drives Between 1866 and 1880[1]

| | | | | | |
|---|---|---|---|---|---|
| 1866 | 260,000 | 1871 | 600,000 | 1876 | 321,928 |
| 1867 | 35,000 | 1872 | 349,275 | 1877 | 201,000 |
| 1868 | 75,000 | 1873 | 404,000 | 1878 | 265,649 |
| 1869 | 350,000 | 1874 | 66,000 | 1879 | 250,927 |
| 1870 | 350,000 | 1875 | 151,618 | 1880 | 394,784 |

1 From A. G. Dawson (1904:117-123).

## Agriculture

Prior to the Civil War, cotton production was concentrated in the Brazos River Valley, and to a lesser extent, in Northcentral and East Texas. The Brazos River Valley was considered an ideal location because it was similar in physical conditions to the parts of the Lower South from which the planters had originally migrated. These were areas suited to the use of slaves, and cotton was the chief cash crop (Boehm 1975:21). After the Civil War, new immigrants settled in areas that were still sparsely populated. Among these areas was the Blackland Prairie, which extends westward into the Lewisville project area. Cotton plantation owners in East Texas and the Brazos and Colorado Rivers had lost their slaves during the war and were forced to change their economic base. As a result, cotton production declined in these areas as it increased in the Blackland Prairie. By 1880, 35% of the cotton production in Texas was in the Blackland Prairie (Boehm 1975:21). Production figures for the six county area are given in Table 5.14.

Major market centers for cotton processing also changed. In the early 1870s, Dallas became a major compress point, along with Denison and Sherman. Cotton produced in the Blackland Prairie was shipped to these cities

Table 5.14

Cotton Production in 1880 and 1890 for Six Counties

| | 1880[1] | 1890[2] |
|---|---|---|
| Collin | 22,145 | 49,077 |
| Cooke | 11,547 | 11,905 |
| Dallas | 21,469 | 41,012 |
| Denton | 11,568 | 20,381 |
| Grayson | 19,166 | 40,871 |
| Tarrant | 10,950 | 16,190 |

1 Compiled from Kerr (1953: Table 10); U.S. Bureau of Census, 1880: Agriculture; 475 lb. bales.
2 Compiled from U.S. Bureau of Census, 1890: Agriculture;
500 lb. bales; figures reported by ginners.

and then on to northern markets through St. Louis and southern markets through Galveston and New Orleans (Ellis 1970:502).

The Blackland Prairie area was the dominant cotton producing region in the state by 1899. By 1909, it was replaced in importance by West Texas. One factor affecting this shift was the boll weevil (Boehm 1975).

One major change in agricultural practices between 1850 and 1880 was the introduction of barbed wire, patented in 1874, and sold in Gainesville, Denton, and other nearby towns in 1875 (Bridges 1978). This made it practical to fence in cattle rather than fencing crops to keep livestock out and had the effect of vastly decreasing the amount of open range.

The majority of the tillable homesteading land had been claimed by 1875, and settlement had spread across the study area. The western edge of the farming frontier extended from "the common border of Montague and Cook[e] counties irregularly to the vicinity of Bandera and thence to the coast a few miles below Corpus Christi" (Richardson, Wallace, and Anderson 1988:293).

Tenant farming became a common practice. The principle cash crops continued to be cotton, corn, and wheat. Almost 40% of all farmers in Texas were tenants during the 1880s (Green 1977:135). Two types of tenancy were common, cash and share. Cash tenants rented the property, equipment, and seed, while share tenant paid the owner with one third of the grain and one fourth of the cotton [or other cash crops] grown during the season. This arrangement intensified during a depression in the 1890s (Ferring and Reese 1982). Many small farm owners were forced into tenancy, while others were forced off of their farms and into the cities.

Farm size (Table 5.15) and tenancy (Table 5.16) data for Denton County indicate that farm sizes increased in the 1870s and 1880s. Median farm size rose from 50 to 99 acres in the 1860s to between 100 and 499 acres in the 1870s. It began to decrease after 1890, but figures for 1935 (Texas Almanac 1939-1940:173-176) reveal that farm size did not decrease substantially and averaged 141 acres in Denton County.

Tenancy increased steadily in Denton County after the Civil War. In 1880 a third of the farmers were tenants, but by 1900, one half were. This increase continued into the early

Table 5.15

Farm Size in Denton County Between 1870 and 1900[1]

| Farm Size | 1870 | 1880 | 1890[2] | 1900 |
|---|---|---|---|---|
| Under 3 acres | 13 | -- | | 29 |
| 3 to 9 acres | 34 | 27 | 30 | 162 |
| 10 to 19 acres | 129 | 211 | 97 | 300 |
| 20 to 49 acres | 255 | 619 | 702 | 1,681 |
| 50 to 99 acres | 117 | 527 | 638 | 1,917 |
| 100 to 499 acres | 18 | 901 | 1,154 | 1,613 |
| 500 to 999 acres | -- | 52 | 79 | 39 |
| 1000+ acres | -- | 19 | 52 | 21 |
| Total | 566 | 2,356 | 2,752 | 5,762 |
| Average Acres | | 127 | 168 | 143 |

1 Compiled from U.S. Bureau of Census 1870, 1880, 1890, 1900: Agriculture.

2 All farms under 10 acres were recorded together.

Table 5.16

Tenancy in Denton County Between 1880 and 1900[1]

| Tenancy | 1880 | | 1890 | | 1900 | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| Owner | 1,454 | 61.71 | 1,541 | 56.00 | 1,848 | 49.96 |
| Rent | 114 | 4.84 | 162 | 5.89 | 223 | 6.03 |
| Share | 788 | 33.45 | 1,049 | 38.11 | 1,628 | 44.01 |

1 Compiled from U.S. Bureau of Census 1870, 1880, 1890, 1900: Agriculture.

2 Owners, part owners, owners/tenants, and managers were grouped under owners.

1900s. Sixty-one percent were tenants in 1910 (Texas Almanac 1914:201-206), 66% percent in 1925 (Texas Almanac 1929:114-117), and a slight decrease was recorded in 1935 (60%) (Texas Almanac 1939-1940:173-176).

As new markets became accessible by rail, increasingly more land was put into cash crop production between 1875 and 1900. Cattle and stock production were more intensive on the western fringe of the project area and further west in the Grand Prairies, while farming was the primary occupation in most of the project area. Industrial development increased within the cities, and new occupations sprang up to meet the market demands. The occupations listed in Denton County in 1880 are presented in Table 5.17.

Table 5.17

Primary Occupations Listed for Denton County in 1880[1]

| | | | | | |
|---|---|---|---|---|---|
| Asst. Postmaster | 2 | Gardener | 1 | Physician | 41 |
| Banker | 1 | Gin Worker | 1 | Physician & Druggist | 3 |
| Barber | 7 | Grocer | 38 | Portrait Artist | 1 |
| Bartender | 1 | Grocery Clerk | 5 | Postmaster | 6 |
| Blacksmith | 42 | Hardware Clerk | 1 | Potter | 4 |
| Bookkeeper | 1 | Dealer | 1 | Potter Hand | 4 |
| Brick Layer | 1 | Harness Shop Worker | 1 | Printing Business | 4 |
| Brick Maker | 2 | Heading Shop | 1 | Railroad Agent | 1 |
| Brick Mason | 2 | Horse Herder | 1 | Railroad Mason | 1 |
| Brickyard Labor | 4 | Raiser | 1 | Railroad Rail Splitter | 1 |
| Butcher | 4 | Trader | 2 | Railroad Tie Chopper | 14 |
| Carpenter | 47 | Hotel Cook | 3 | Railroad Tie Contractor | 2 |
| Carriage Maker | 3 | Hotel Keeper | 9 | Railroad Tie Hauler | 2 |
| Cattle/Stock Dealer | 5 | Huckster | 3 | Representative Texas Legis. | 1 |
| Cattle/Stock Driver | 3 | Jailer | 1 | Restaurant Cook | 2 |
| Cattle/Stock Hand | 5 | Jobber | 4 | Saddler or Harness Maker | 1 |
| Cattle/Stock Herder | 11 | Justice of the Peace | 3 | Saloon Clerk | 3 |
| Cattle/Stock Owner | 1 | Keeps Livery | 5 | Saloon Keeper | 3 |
| Cattle/Stock Raiser | 40 | Keeps Restaurant | 1 | School Teacher | 47 |
| Cattle/Stock Trader | 11 | Laborer | 721 | Seamstress | 12 |
| Cattleman | 6 | Laborer in Barn | 1 | Servant | 98 |
| Chair Maker | 1 | Land Merchant | 2 | Sewing Machine Agent | 1 |
| Clergy | 38 | Laundress | 1 | Sheep Herder | 3 |
| Clerk in Store | 33 | Lawyer | 11 | Raiser | 1 |
| Cook | 4 | Lime Burning | 1 | Sheriff | 4 |
| Constable | 2 | Liquor Dealer | 3 | Shoe/Boot Maker | 8 |
| Cotton Dealer | 1 | Liquor Store Keeper | 1 | Stage Driver | 3 |
| Cotton Dealer Ginner | 3 | Livery Stable Worker | 2 | Stationary Retailer | 1 |
| Cotton Dealer Merchant | 1 | Liveryman | 1 | Stone Mason | 5 |
| County Assessor | 1 | Loaning Money | 1 | Store Keeper | 1 |
| County Clerk | 2 | Machinist | 2 | Student of Law | 2 |
| County Clerk Office Worker | 1 | Mail Carrier | 2 | Surveyor | 1 |
| County Clerk Treasurer | 1 | Mattress Maker | 1 | Tailor | 1 |
| Cowboy or Cowman | 2 | Mechanic | 2 | Teamster | 14 |
| Day Laborer | 4 | Merchant | 27 | Telegraph Oper. | 1 |
| Dairyman | 2 | Midwife | 1 | Tinner | 2 |
| Dentist | 3 | Mill Worker | 1 | Tinsmith | 5 |
| District Clerk | 2 | Miller | 18 | Trader | 1 |
| District Clerk Judge | 1 | Milling & Ginning | 1 | Undertaker | 3 |
| Dress Maker | 2 | Milliner | 1 | U.S. Marshall | 1 |
| Drives Team | 1 | Miner | 1 | Wagon Maker | 4 |
| Dry Goods Clerk | 5 | Music Teacher | 3 | Waggoner | 1 |
| Dry Goods Merchant | 20 | Newster | 1 | Washer Woman | 10 |
| Druggist | 9 | Nurse | 1 | Watch Maker | 1 |
| Drummer | 1 | Painter | 12 | Well Digger | 5 |
| Editor | 1 | Peddler | 4 | Wheelwright | 1 |
| Engineer | 6 | Photographer | 4 | Unknown | 21 |
| Engineer at Mill | 4 | | | | |
| Farm Laborer | 138 | | | | |
| Farmer | 3000 | | | | |
| Freighter | 3 | | | | |
| Furniture Dealer | 1 | | | | |

1 Compiled from U.S. Bureau of Census, 1880: Population.

**New Century (1900 to Present)**

Economic turbulence in the U. S. early in the twentieth century was partially caused by the unstable cotton economy nationwide. By 1910, over 50% of all farmers in Texas were tenants (Green 1977:135), and over 60% in Denton County (see Table 8.16). Rising land values caused many landowners to demand cash payments in addition to the usual thirds and fourths crop payments. This, coupled with exorbitant interest rates made it almost impossible for the average renter to get ahead (Ferring and Reese 1982).

This pattern continued through the 1920s when the availability of cheap farm labor increased the percentage of tenant farmers, including both cash cropping and

sharecropping. By the mid 1930s, cotton was losing its importance as a cash crop in Northcentral Texas (Table 5.18).

Table 5.18

Cotton Bales Ginned for Six County Area From 1916 to 1938[1]

| | Collin | Cooke | Dallas | Denton | Grayson | Tarrant |
|---|---|---|---|---|---|---|
| 1916 | 81,927 | 20,755 | 57,666 | 38,304 | 55,815 | 28,826 |
| 1917 | 89,560 | 29,965 | 67,262 | 47,761 | 72,783 | 30,870 |
| 1918 | 69,365 | 15,145 | 53,036 | 20,242 | 41,331 | 19,011 |
| 1919 | 56,311 | 23,763 | 39,073 | 30,128 | 53,443 | 18,034 |
| 1920 | 75,315 | 10,166 | 45,939 | 12,067 | 44,943 | 11,697 |
| 1921 | 45,564 | 4,552 | 29,512 | 10,521 | 15,236 | 7,182 |
| 1922 | 66,709 | 12,181 | 39,898 | 20,159 | 33,689 | 15,680 |
| 1923 | 92,270 | 20,685 | 53,949 | 37,286 | 57,636 | 26,143 |
| 1924 | 98,103 | 31,064 | 65,061 | 50,304 | 74,835 | 34,106 |
| 1925 | 91,444 | 15,128 | 62,144 | 38,083 | 64,176 | 22,439 |
| 1926 | 70,525 | 20,012 | 55,095 | 40,608 | 54,196 | 33,641 |
| 1927 | 44,125 | 9,142 | 34,513 | 26,033 | 28,810 | 17,812 |
| 1928 | 73,322 | 16,263 | 47,217 | 27,536 | 49,190 | 14,574 |
| 1929 | 71,748 | 12,052 | 38,844 | 26,370 | 43,333 | 16,320 |
| 1930 | 68,130 | 9,622 | 30,112 | 19,898 | 40,405 | 14,127 |
| 1931 | 104,029 | 17,971 | 52,451 | 33,368 | 64,351 | 19,416 |
| 1932 | 69,717 | 15,518 | 33,464 | 27,186 | 42,790 | 17,343 |
| 1933 | 70,943 | 21,373 | 35,133 | 27,814 | 50,552 | 16,109 |
| 1934 | 41,461 | 6,897 | 21,168 | 11,082 | 22,181 | 8,216 |
| 1935 | 40,710 | 11,1292 | 1,036 | 18,947 | 25,325 | 11,866 |
| 1936 | 65,333 | 8,900 | 32,554 | 19,894 | 37,550 | 12,747 |
| 1937 | 87,968 | 14,149 | 41,431 | 26,468 | 59,026 | 17,479 |
| 1938 | 58,907 | 8,953 | 26,276 | 17,452 | 41,689 | 8,289 |

1 Compiled from Texas Almanac 1939-1940: 184-185
" " Supplement 1937: 24
" " 1936: 239-241
" " 1931: 169-171
" " 1927: 151-153
" " 1912: 192-193

Farm size and mechanization increased, while land prices decreased. The number of farms continued to increase until about 1910 when 4,303 farms were reported for Denton County (Texas Almanac 1914:201-206). By 1925 they had declined to 4,255 (Texas Almanac 1929:114-117) and to 3,796 in 1935 (Texas Almanac 1939-1940:173-176). Data available for the state (Table 5.19) indicate that while the average number of acres harvested per farm, value per farm, and value of farm products per farm increased steadily between 1880 and 1970 (period shown), farm population and the number of farms also increased until the Depression, when they began to decline.

Table 5.19

Statistical Data of Texas Agriculture, 1880-1970[1]

| | Farm Pop. | Number of Farms | Avg. Acres Harvested Per Farm | Value Per Farm | Value of Products Per Farm[2] |
|---|---|---|---|---|---|
| 1880 | | 174,184 | 30.8 | 979 | 374 |
| 1890 | | 228,126 | 36.8 | 1,753 | 516 |
| 1900 | | 352,190 | 42.9 | 1,964 | 681 |
| 1910 | | 417,770 | 44.0 | 4,412 | 1,029 |
| 1920 | 2,314 | 436,033 | 57.4 | 8,486 | 3,140 |
| 1925 | 2,363 | | | | |
| 1930 | 2,359 | 495,489 | 61.8 | 7,260 | 1,598 |
| 1940 | 2,160 | 418,002 | 62.3 | 6,196 | 1,128 |
| 1945 | 1,520 | | | | |
| 1950 | 1,292 | 331,567 | 84.8 | 20,263 | 5,672 |
| 1960 | 806 | 227,071 | 140.1 | 51,787 | 9,287 |
| 1970 | 471 | 213,550 | 154.5 | 99,133 | 23,0773 |

1 Compiled from Fite (1984:Table A1 through Table A6).
2 Figures are from decennial agricultural censuses.

War-related jobs and the oil industry provided temporary relief from the economic hardships of falling farm crop prices. Employment in the cities was an economic alternative chosen by many people in the project area. The population dropped as farmers converted to large-scale ranching or agribusiness, or left their farms because small farms were no longer economically viable (Skinner et al. 1982a, b).

# CHAPTER 6

# HISTORIC SITE DESCRIPTIONS

by

**Susan A. Lebo, with faunal descriptions by Bonnie C. Yates and archival contributions by Bruce Mergele**

Chapter 6 provides an overview of the historic investigations at the three mitigation sites. These sites are 41DN401, 41DN404, and 41DN429. This overview is presented in three sections: (1) historic communities, (2) site descriptions, (3) intrasite comparisons and summary. Section one contains a brief discussion of the communities the three mitigation sites were associated with. Section two provides a detailed overview of the field investigations and results at each mitigation site. Site age, size, complexity, content, and spatial patterning of the three sites is compared in section three.

## HISTORIC COMMUNITIES

The three historic sites discussed in this chapter are associated with two early communities in the Lewisville Lake area. Sites 41DN401 and 41DN404 are on the southwestern fringe of Little Elm, while 41DN429 is in the McCurley Community. Little Elm is in the northeastern part of the lake area and was named after Little Elm Creek (Lowry 1980). The McCurley Community, two miles southeast of Lake Dallas, was named for the McCurley brothers, who settled the area in 1852 (Webb 1952:108).

The community school system was established in Texas in 1876, allowing any group of parents to organize themselves into a school community and apply for state funds based on the number of qualifying pupils ages eight to fourteen (Watson 1976). Early schools established in the Lewisville Lake area in 1876 include Hackberry, McCurley, Stewart's Creek, Lewisville, Little Elm, and Chinn. The community system was abolished in 1884, and a county school district system was established. Both Little Elm and McCurley are listed in the 1881 and 1884 records (Denton County Historical Commission 1980; Watson 1976).

Other schools in the area in 1884 are Lloyd (Rural Hill), Hackberry, Lake Dallas (Garza), Hebron (Griggs), Willow Springs (Hebron), Salt Branch (Little Elm), and Independence (Lake Dallas and Corinth area) (Watson 1976). According to Watson (1976), the largest black community schools were established in Denton (1876), Pilot Point, Lewisville, and Hickory (1877). Communities with schools for black pupils in 1884 included Denton, Bolivar, Hickory, Pilot Point, Lewisville, Dry School, Friendship, Clarks School, McCurley, Belew, Good Hope, Antioch School, Aubrey, Lloyd, Drop, Long Point School, and Sander (Denton County Historical Commission 1980; Watson 1976).

### Little Elm Community

The Little Elm Community was formed by the consolidation of several settlements, including Lloyd, Hackberry, Dickson, and Hilltown (Lowry 1980:15). Postal service was established in 1845. The mail route ran from Preston Bend on the Red River to Birds Station, later called Birdsville, in Tarrant County. The first post office was at Kit King's residence on Little Elm Creek. The first post office in Little Elm dates to 1853. The post office for the Lloyd settlement was established in 1877 and ended in 1907 (Harris 1986:57-58).

Early businesses in Little Elm included a store, a gin, and a livery stable, all begun by Henry Hill after the Civil War. George Button's shoe and harness shop was another early establishment (Harris 1986). Further,

> Ed and Hardy Holmes went back to Louisiana and brought back the small gin the Federal Army had missed and located it near the small tank just west of Cottonwood Bridge...This gin was a two-stand, hand-fed cotton gin and was powered by two oxen in a tread wheel that was about 20 feet in diameter...This gin was later changed to horse power with eight horses hitched to four beams revolving on a plane (Harris 1986:80).

The gin was converted around 1867 or 1868 and was later sold to Henry Hill, who also operated a wheat mill using power from the gin (Harris 1986). An early school in Little Elm met in the Lively Lodge Hall in 1870 (Watson 1976).

### McCurley Community

The McCurley Community, also called the French Settlement, was located on the forks of the Big Elm and Hickory Creek and was started by the French and McCurley families (Bates 1918:60). Two of the early settlers, George Washington McCurley and Jonas McCurley, brothers from Illinois, settled on McCurley Prairie (Hudson n.d.). The McCurley Community was later called Garza (Bates 1918).

> George Washington McCurley's sons were Francis Brown (Frank), Abraham, and George Collins. They remained in the McCurley Prairie area. Jonas McCurley's family moved to the Denton area within a few years.
>
> George Collins McCurley purchased two (2) acres of land adjoining his for the McCurley Community to use for church, school, and seminary (sic) purposes on November 12, 1894. The property line extended West with the South line of the Graveyard (Hudson n.d.:1).

The Schoolhouse and cemetery formed the center of the McCurley Community in 1847 (Webb 1952:108). The McCurley Cemetery was relocated by the U.S. Army Corps of Engineers in 1951 when the construction of Lewisville Lake began. Robert Lee McCurley and Andrew Jackson McCurley, sons of George C. McCurley, working with the U.S. Army Corps identified 106 graves. The cemetery was moved to Lewisville, adjoining the Old Hall Cemetery. Plats were drawn of the old and new grave locations and a cemetery committee was created (Hudson n.d.:2).

Jonas B. McCurley obtained the entire J. S. Weldon survey (A-1398) of 640 acres in 1853. Two historic sites identified on this property are 41DN423 and 41DN424. Results of the archaeological test excavations at these sites is presented in Brown and Lebo (1990). Both sites were farmsteads dating in the period between 1880 and 1940.

George W. McCurley obtained the entire W. B. Weldon survey (A-1351) of 320 acres in 1855. He acquired an additional 320 acres from his brother in 1855, when Jonas B. McCurley sold him half of the J. S. Weldon survey. Jonas moved his family to Oklahoma (Belcher 1984). He sold his remaining 320 acres to Morgan Crudle in 1861. Sites 41DN429 and 41DN430 were identified on the W. B. Weldon survey. Results of the archaeological test excavations at 41DN430 are discussed in Brown and Lebo (1990). Only the chain of title for 41DN429 is included here. This information indicates that the McCurley family continued to own and occupy portions of these two surveys until they were purchased by the U.S. Army Corps of Engineers in 1951.

## SITE DESCRIPTIONS

Mitigation excavation was conducted at three historic sites, 41DN401, 41DN404, and 41DN429 in 1988. This section overviews the field investigations and results. The site descriptions are organized to provide a rapid overview of the site as well as detailed site information. General site information is encapsulated in a table format at the beginning of each description, including information on USGS map quad, elevation, vegetation, site type, and occupation range. Detailed discussion includes archival and archaeological data on site location, context, topography, size, age, features, integrity, and pertinent archival, oral history, and architectural data.

Only the historic sites that received mitigation-level investigation are presented in this chapter. Sites recorded or re-recorded during the survey phase are presented in Lebo and Brown (1990), and the 16 historic sites that were tested are discussed in Brown and Lebo (1990).

### 41DN401

| | |
|---|---|
| Map Quad | Little Elm 7.5', #3396-223 |
| Elevation above MSL | 520-530' |
| Vegetation | Locust, Bois d'arc, Grasses |
| Cultural Affiliation | Historic (ca. 1870s to 1940s) |

**Description**: The site is located on a north-facing ridge slope at the northern end of Lewisville Lake State Park. The current site area is approximately 40 m north-south by 55 m east-west based on surface features and shovel testing (Figure 6.1).

Sandstone blocks on the south side of the house mound were probably piers for the south porch. The mound was estimated at approximately 15x15 m. A chimney base comprised of brick rubble, and sandstone and limestone blocks is located in the southeast corner of the mound. Several poured concrete footings for support posts occurred off the southwest corner of the house mound. Metal support braces to a windmill remain southwest of the mound. Several old fence lines cross the site, and a cellar (formerly identified as a dugout) occurs west of the windmill. The function of this structure was not ascertained during the survey. A concrete ater trough is located on the far southwestern edge of the site, well outside the main sheet refuse area.

The artifact assemblage recovered during survey reflected a farmstead occupation dating from ca. 1880 to 1940. The refined earthenwares yielded a mean ceramic beginning date of 1873 (n=11 sherds), and the stonewares yielded a date of 1872 (n=6 sherds). The diagnostic bottle glass (n=18 sherds) provided a date of 1894. A single sherd which dated post-1940 was excluded from the calculation of the above date because it post-dated occupation of the site. A combined beginning date of 1883 was obtained for the site. The architectural remains included one piece of machine made brick and one wire nail.

**Archival Investigations**: Site 41DN401 is located on the A. W. Rogers survey A-168 (Figure 6.2), and an overview of the chain of title is provided in Table 6.1. The site is situated on Tract 2, and was first homesteaded in the 1880s. In 1881, W. M. Granberry acquired the entire survey, and filed for a homestead designation in 1888, at which time he listed 200 acres as encumbered, and 120, nonencumbered. This farmstead is located on the 1918, 1936, and 1946 maps. It is represented by a windmill only on the 1960 map. It is located outside the area included on the 1925 map.

**Previous Investigations**: The site was recorded by archaeologists from the University of North Texas during the 1986-87 survey phase. Sixteen shovel test pits were dug, and a representative sample of diagnostic surface artifacts was collected. Material was found in Shovel Test Pits 2-4 and 13. The remaining units were sterile.

Testing Method: Testing included excavation of five backhoe trenches, thirteen 1x.5-m test units, four shovel test pits, and one hand-excavated trench comprised of five contiguous 1x1-m units. In addition, a 12x12-m block containing nine contiguous 4x4-m units was systematically surface collected (see Figure 6.1).

Backhoe Trenches 1-3 were excavated to examine the eastern and western site limits, respectively. Backhoe Trenches 4 and 5 were contiguous and were placed to recover information about the house mound, chimney fall, and sheet refuse deposit associated with the north and east yards. The 1x.5-m units were judgmentally located to maximize site coverage. The surface collection units were placed in the north or back yard where a high density sheet refuse deposit was identified in Test Unit 6. These units were excavated to recover both vertical and horizontal data on this deposit, along with data on site age, duration, and spatial overlapping of multiple historic components.The testing data revealed a serially occupied historic farmstead occupied ca. 1870s to the 1940s or 1950s. The house mound and proximal yard area contained a dense sheet refuse deposit reflecting these serial occupations.

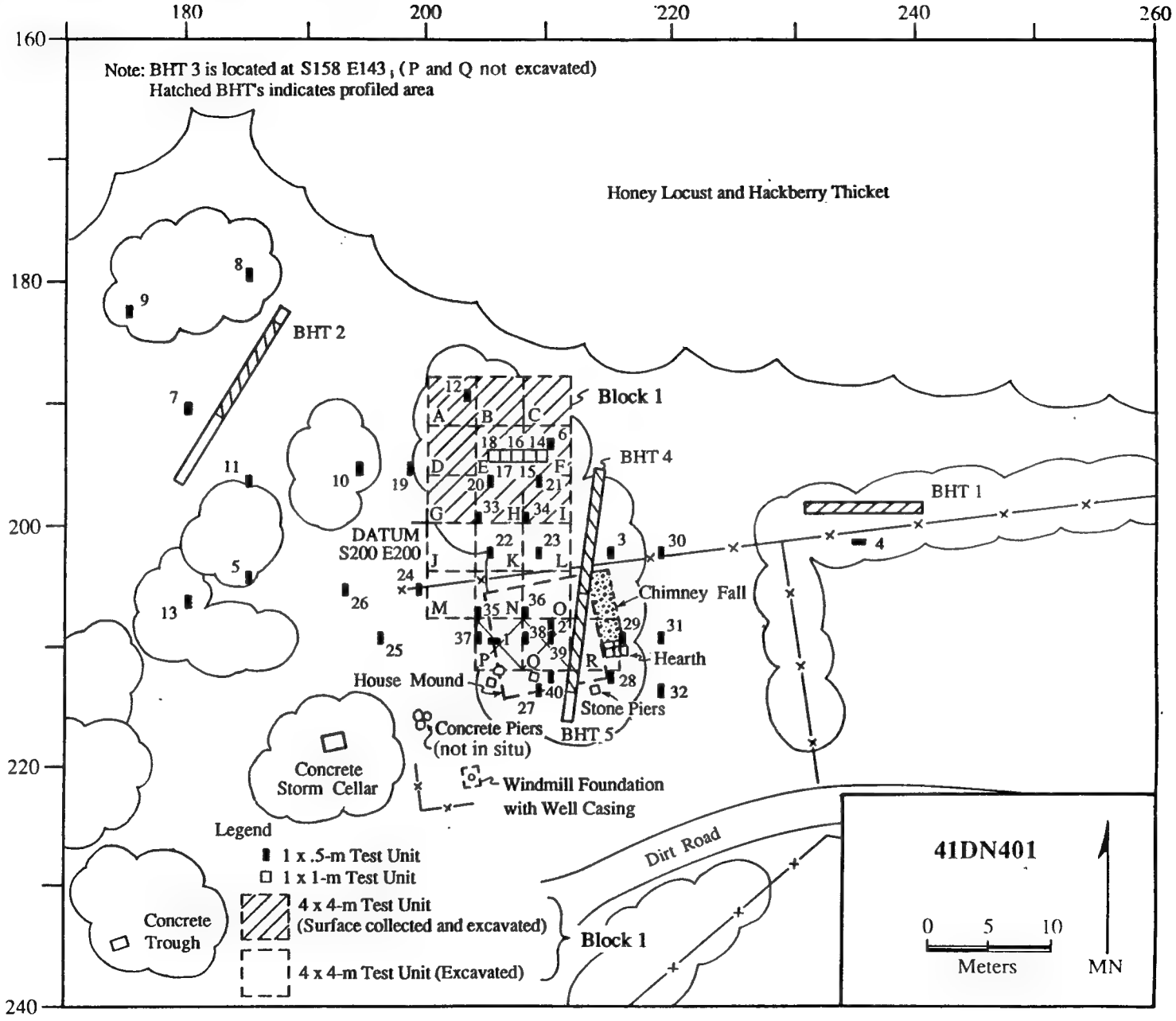



Figure 6.1 Site map for 41DN401.

Table 6.1

Land Tract History for Site 41DN401

A. W. Rogers survey A-168

| Date | Grantor | Grantee | PriceLand Description | Reference |
|---|---|---|---|---|
| 1859 | A. W. Rogers and wife | W. M. Coffee | $720.320 ac; entire survey | D/425 |
| 1867 | W. M. Coffee (Kentucky) | J. Hufford | $1,000.320 ac; same as above | D/427 |
| 1869 | J. Hufford and wife Cynthia | R. M. Key | $1,000.320 ac. | D/429 |
| 1872 | R. M. Key and wife Emma | J. Hufford | $2,500.320 ac. | D/431 |
| 1873 | J. Hufford | M. Splawn | $4,000.320 ac. | D/432 |
| 1875 | M. Splawn and wife Margaret | J. Hufford (Collin Co.) | $4,100.320 ac. | D/434 |
| 1876 | J. Hufford (Grayson Co.) | Mrs. C. H. Hollenbeck (Dallas Co.) | $2,500.320 ac. | D/435 |
| 1878 | C. H. Hollenbeck | C. J. Hufford | $1,800.320 ac. | L/43 |
| 1881 | J. and C. J. Hufford | W. M. Granberry | $2,000.320 ac. | 28/106 |
| 1888 | W. M. Granberry | homestead | 200 ac, 120 nonencumbered | 36/565 |
| 1890 | W. M. Granberry and wife Mary | H. Sommerville and Texas Loan Agency (Corsicana, Tx.) | $4,000.320 ac; entire survey and 120 ac. of A. J. King survey Tracts 1 and 3 | 44/206 |
| 1893 | H. Sommerville and wife Mollie (Collin Co.) | J. M. London | assume320 ac; same as above $4,000. note | 51/102 |
| 1896 | J. M. London (partner of H. Sommerville) | A. J. Streeter | assume320 ac; same as above note and $7,199. debt | 56/633 |
| 1898 | Texas Black Land Co. of Dallas | J. M. Avery | $1,504.320 ac; same as above | 72/573 |
| 1900 | J. M. Avery | F. M. Grace and A. H. Smith | $30.Northeast corner of survey for cemetery (98/100 ac. of Tract 3) | 115/465 |
| 1902 | J. M. Avery | W. D. Austin | $4,700.320 ac. minus cemetery | 85/295 |
| 1902 | W. D. Austin (Rockwall Co.) | R. M. Womack (Rockwall Co.) | $11,200.320 ac. minus cemetery | 84/295 |
| 1910 | Mrs. M. M. Womack (femme sole; Oklahoma) | H. F. Griffin (Grayson Co.) | $10,000.320 ac. minus cemetery | 103/526 |
| 1911 | H. F. Griffin and wife Laura A. (Grayson Co.) | T. Wilson (Grayson Co.) | Trade for lot200 ac; Tract 2 in Sherman | 105/383 |
| 1913 | T. Wilson and wife Clara T. (Grayson Co.) | D. C. Adams | $6,000.200 ac; same as above | 125/609 |
| 1913 | D. C. Adams and wife Fannie | Julia Hessel and husband F. E. | $10,200.200 ac; same as above | 124/365 |
| 1918 | F. E. Hessel and wife Julia | M. M. Squires | $14,000.200 ac; same as above | 163/65 |
| 1921 | M. M. Squires and wife Ella | F. E. Hessel | $16,955.200 ac; same as above | 179/498 |
| 1921 | F. E. Hessel and wife Julia | G. W. Morrell | $8,555.200 ac; same as above | 178/152 |
| 1922 | G. W. Morrell and wife Elaine (Johnson Co.) | HUB Mfg. and Trading Co. | $17,500.200 ac; same as above | 177/245 |
| 1933 | John Hancock Mutual Life Insurance Co. (Boston) | E. H. Ray | $5,000.196.31 ac; Tract 2 | 177/245 |
| 1938 | E. H. Ray and wife Mrs. Belle Seay | J. B. McEntire | $2,250.196.31 ac; same as above | 273/374 |
| 1952 | Maud S. McEntire | USA | 196.31 ac; same as above and 270.39 ac from adjoining survey | 382/127 |

The profiles exposed in the backhoe trenches indicate that the A-horizon remains intact (Figure 6.3). A recent trash pit was encountered in Backhoe Trench 2, but no material was collected. The house mound was exposed in Backhoe Trench 5, including an in situ pier on the west side of the trench. The A-horizon is a dark, silty clay with a low to moderate density of calcium carbonate concretions. The units placed in the northwestern site area contained material from the more recent component and post-occupation debris. Recent debris was also visible in this area and in the western site area.

An overview of the systematic surface collection data from the north or backyard is presented in Brown and Lebo (1990). The south row is well within the main sheet refuse deposit, while the north row is on the fringe, or possibly outside this feature.

The assemblage from the excavated units is shown in Brown and Lebo (1990) and is included in Table 6.2 shown below . The 1x1-m units recovered material from the densest part of the sheet refuse feature, while the 1x.5-m units

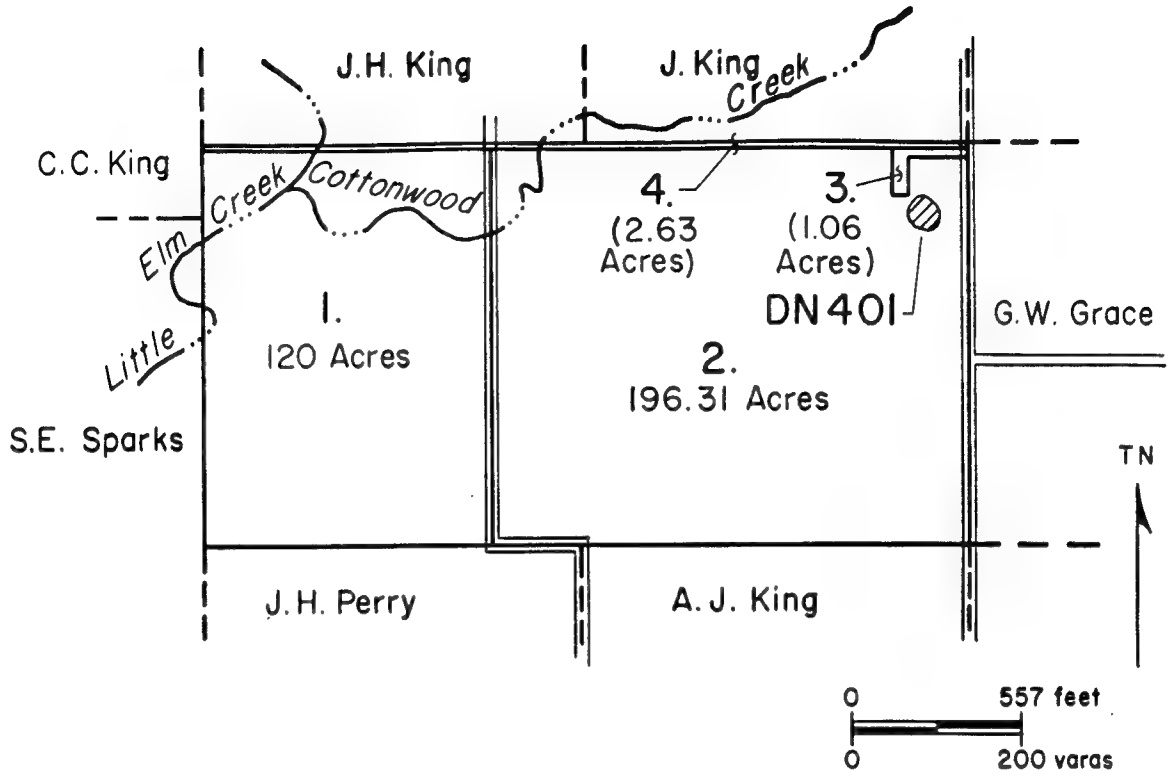



Figure 6.2 Location of site 41DN401 on Tract 2 of the A. W. Rogers survey, A-168.

recovered a mixture of house debris, sheet refuse, and a limited amount of post-occupation debris.

The surface and subsurface assemblages recovered from the site during testing indicated that the sheet-refuse deposit and other features remain intact. The site meets the criteria for nomination to the National Register. The farmstead was occupied ca. 1870s to 1940s or 1950s. The dwelling area exhibits integrity and potential for yielding information on house orientation, size, and layout, as well as spatial patterning of activity areas around the house.

**Mitigation Methods**: Mitigation included excavation of 22 1x.5-m units and Block 1 containing 16 contiguous 4x4-m units (Figure 6.4). The 1x.5-m units were concentrated in the main site area, located to recover additional coverage within the house and the sheet refuse deposit north of the dwelling. Additional units were located further away from the dwelling, increasing coverage of outer areas of the site. The 16 4x4-m units were placed to recover continuous spatial data within the house mound and the backyard. Each unit was subdivided and excavated in 2x2-m quads, which were screened, bagged, and analyzed separately. These units are labeled A-R, and units A-I were surface collected during testing. Units P and Q were not excavated, and units M, N, and R were only partially excavated. A detailed map of Block 1 is shown in Figure 6.4.

A sample of the units were dug in arbitrary 5-cm levels (E, G, I, K, M, O), while the remainder were excavated using 10-cm levels to determine if vertical stratigraphy occurred within the sheet refuse deposit. Unless specified, these levels are combined for all tables and figures (density maps) presented below. Some 4x4-m units contained previously excavated 1x.5-m or 1x1-m units. When this occurred, the artifacts from the upper 10-cm (Level 1) were included in the artifact tables and density maps for Block 1.

**Mitigation Results**: The artifact assemblage recovered during mitigation is shown by unit type in Table C.1. The assemblages recovered during the survey and testing phases are included and specified. These data indicate a well-defined, moderate to high-density sheet-refuse deposit. Architectural remains dominate, accounting for 38.44% of the collected assemblage (Table 6.2). When these items and tin can fragments are excluded from the assemblage total, bottle glass accounts for 68.38% of the recovered assemblage. Machine-cut nails account for 49.45% of the nails, while handmade brick totalled 94.14% of the bricks, further indicating construction of the dwelling during the late nineteenth century.

Artifact Distributions: Using the artifact data from the 1x.5-m units and the 1x1-m units, density maps were produced for each major artifact category. The values shown on these

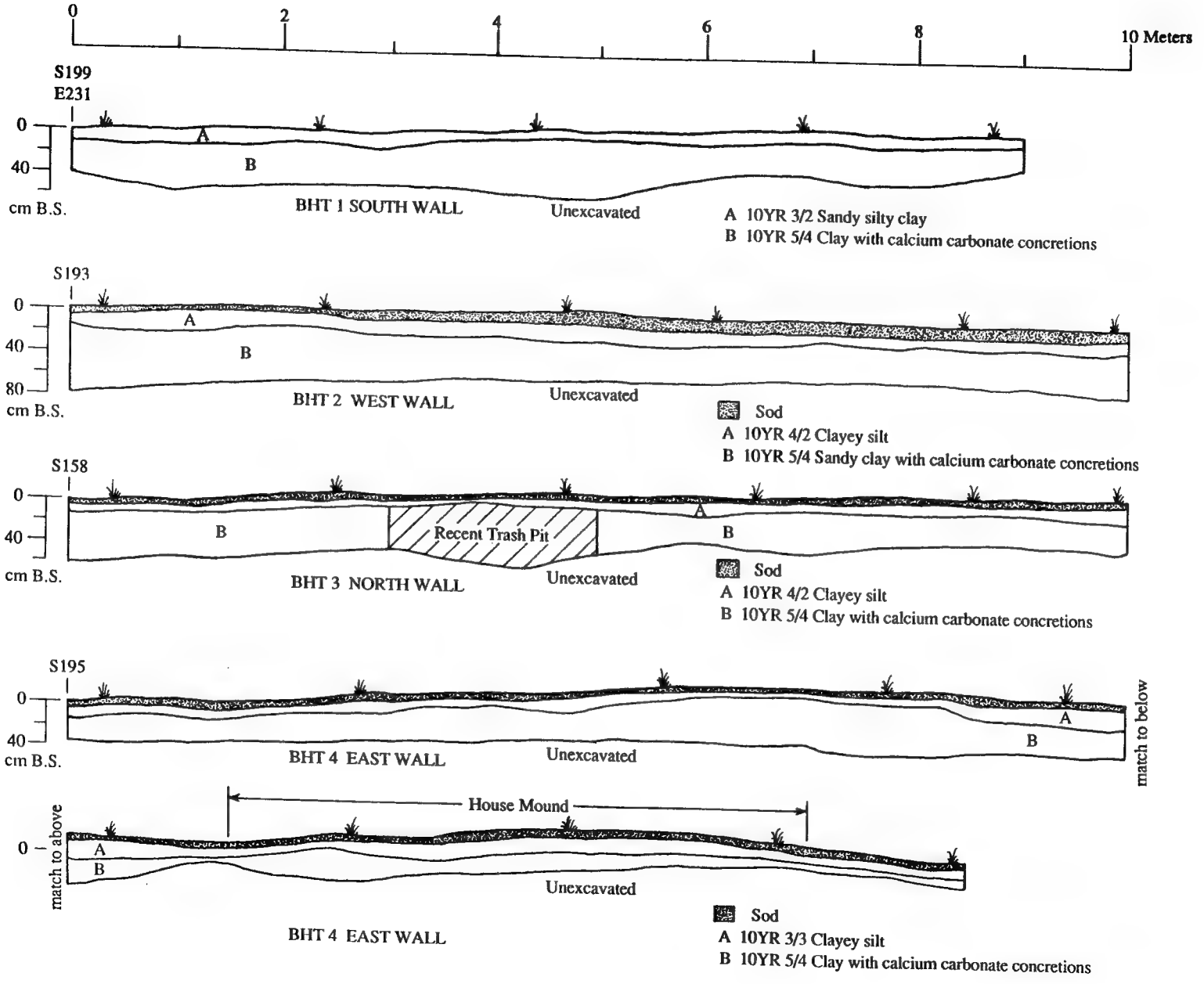



Figure 6.3 Profiles of backhoe trenches 1 through 4 at 41DN401.

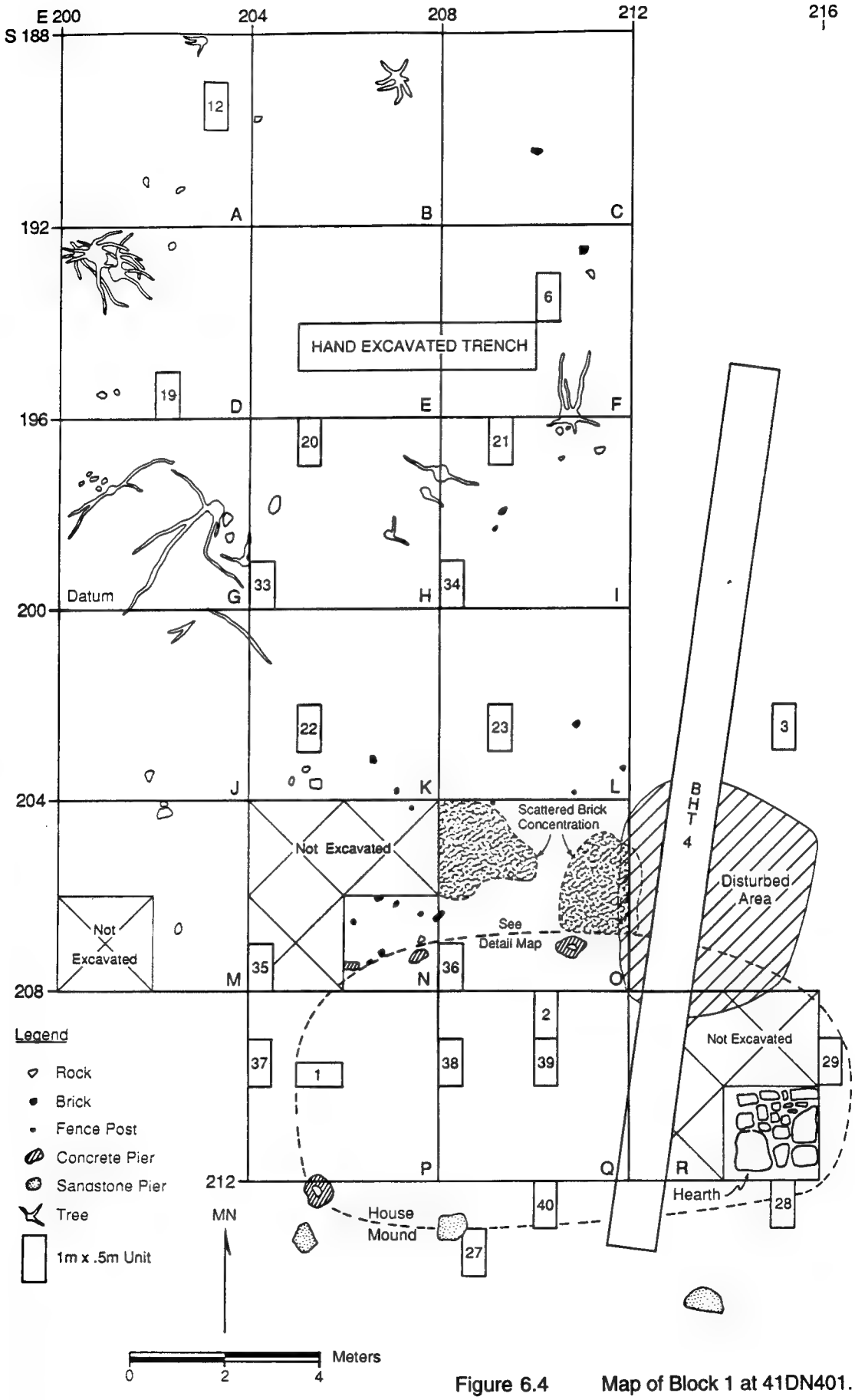



Figure 6.4 Map of Block 1 at 41DN401.

maps were calculated per 1x.5-m unit. Data from the 1x1-m units was divided in half and included in the construction of these maps. Separate density maps were produced using data from level 1 excavations in Block 1.

1x1-m and 1x.5-m Units: The distribution of refined earthenwares across the site is shown in Figure 6.5. The highest densities occur northwest of the dwelling, in an outbuilding area, and directly behind the house north of the barbed wire fence separating the inner and outer active yard areas. Very few refined earthenware sherds were found in the south or front yard, under the dwelling, or in outer or peripheral yard areas. Under the dwelling sherds occurred near the edge of the house mound. Refined earthenwares sherds ranged from zero to 31 sherds per 1x.5-m unit.

Table 6.2

Overview of Artifact Assemblage from 41DN401

| Category | Total | % | %[1] |
|---|---|---|---|
| Semi-coarse Earthenware | 77 | 0.10 | 0.22 |
| Refined Earthenware | 5041 | 6.37 | 14.40 |
| Stoneware | 947 | 1.20 | 2.70 |
| Porcelain | 612 | 0.77 | 1.75 |
| Bottle Glass | 23940 | 30.24 | 68.38 |
| Table Glass | 1053 | 1.33 | 3.01 |
| Lamp Glass | 383 | 0.48 | 1.09 |
| Unid. Glass | 333 | 0.42 | 0.95 |
| Window Glass | 14778 | 18.66 | |
| Cut Nails | 3311 | 4.18 | |
| Wire Nails | 3385 | 4.28 | |
| Handmade Brick | 4899 | 6.19 | |
| Machine-made Brick | 305 | 0.39 | |
| Personal Items | 619 | 0.78 | 1.77 |
| Thin & Heavy Metal | 775 | 0.98 | 2.21 |
| Tin Cans | 13740 | 17.35 | |
| Household Items | 782 | 0.99 | 2.23 |
| Machine & Wagon | 94 | 0.12 | 0.27 |
| Metal Hardware | 126 | 0.16 | 0.36 |
| Ammunition | 93 | 0.12 | 0.27 |
| Horse and Stable Gear | 98 | 0.12 | 0.28 |
| Electrical | 37 | 0.05 | 0.11 |

[1] restricted frequencies

Stonewares exhibited two major clusters (Figure 6.5). The first, S204 E184, correlates with the western high density cluster of refined earthenwares. The second is located north of the hand-excavated trench at the north-end of Block 1. The major distribution of stonewares was away from the dwelling in the northwest active yard. Few sherds occurred under the house. Stoneware densities ranged from zero to 16 sherds.

Bottle glass (Figure 6.5) is broadly distributed across the site, but is concentrated in several high density clusters, including two in the front or south yard. These two units contained 109 (west unit), and 112 (east unit) bottle glass sherds. Densities for the site ranged from zero to 182 bottle glass sherds per 1x.5-m unit. The highest density occurred north of the fence just off the northwest corner of the dwelling. Like refined earthenwares, few bottle glass sherds occurred in the northwest outer or peripheral yard or under the dwelling. The highest density in the outer yard area was 10 sherds per 1x.5-m unit, while under the house the highest was 14 sherds.

Window glass fragments were concentrated in two units off the northwest corner of the house (Figure 6.5). The southern unit contained 133 sherds and the northern had 100 sherds. The density range for window glass sherds per 1x.5-m unit was zero to 133. A high density cluster also occurred east of the house.

Machine-cut nails ranged from a density low of zero to a high of 30 per 1x.5-m unit. The highest concentrations occurred just north of the fence behind the dwelling, in one unit located on the south edge of the house mound, and in the active yard north and northwest of the dwelling. Densities under the house were low, ranging from 1 to 8 nails per unit.

Block 1: Definable variability is evident in the density distribution of major artifact categories within Block 1. Using data from level 1, the distribution of ten categories is shown in Figures 6.6 to 6.8. Variability is also observable between the density maps produced for the 1x.5-m units and Block 1, much of which can be accounted for by differences in sampling. The 1x.5m-unit data provide a general overview of the spatial distribution of major artifact categories for the site, while the contiguous units in the block provide a more accurate, but smaller spatial overview.

Refined earthenwares are clustered between S196 and S204 on the west side of the block, four to twelve meters behind the dwelling (Figure 6.6). This distribution correlates with the pattern shown in Figure 6.5 for the 1x.5-m units. Few sherds were found in the northern section of the block, particularly in the northeast corner, or in the southeast corner. The high-density cluster shown in Figure 6.5 for the 1x.5-m units is not evident.

Stonewares exhibit a more diffuse pattern in Block 1 than refined earthenwares, but primarily cluster in the west half of the block (Figure 6.6). The number of stoneware sherds recovered from the northwest portion of the block indicates that stonewares occur primarily over 10 m from the house, clustering further away than refined earthenwares, bottle glass sherds, and architectural remains. Like refined earthenwares, few stonewares occur in the northeast or southeast corners of Block 1.

Bottle glass sherds are concentrated in the southwestern portion and the southeast corner of the block (Figure 6.6). Few sherds occur in the north half, particularly in the northeast corner. These data indicate that bottle glass sherds cluster near the house mound (S208 line), but primarily between 4 and 12 m northwest of the house and north of the barbed-wire fence that bisects the site north of the house.

The highest concentration of window glass sherds does not occur within the house mound or directly adjacent to it (Figure 6.6). Only the SE Quad of Unit O contained over 400 sherds (50 sherds or greater per 50x50x10-cm unit). A small cluster of high-density units (301+ sherds) occurs along the western edge of the block between S194 and S200. Several

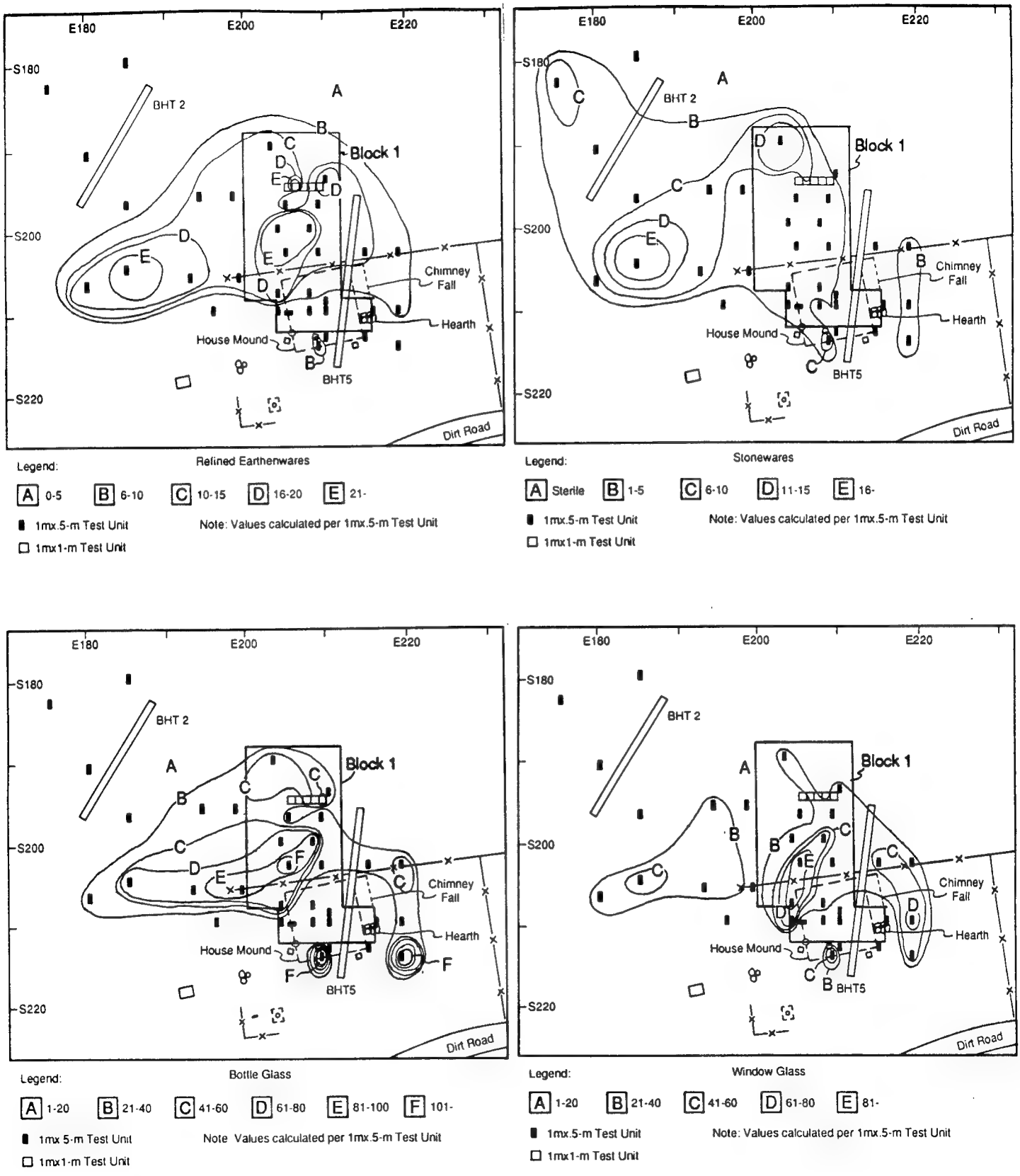



Figure 6.5 Distribution of refined earthenwares, stonewares, bottle glass, and window glass sherds at 41DN401 based on artifacts recovered from 1x.5-m and 1x1-m units.

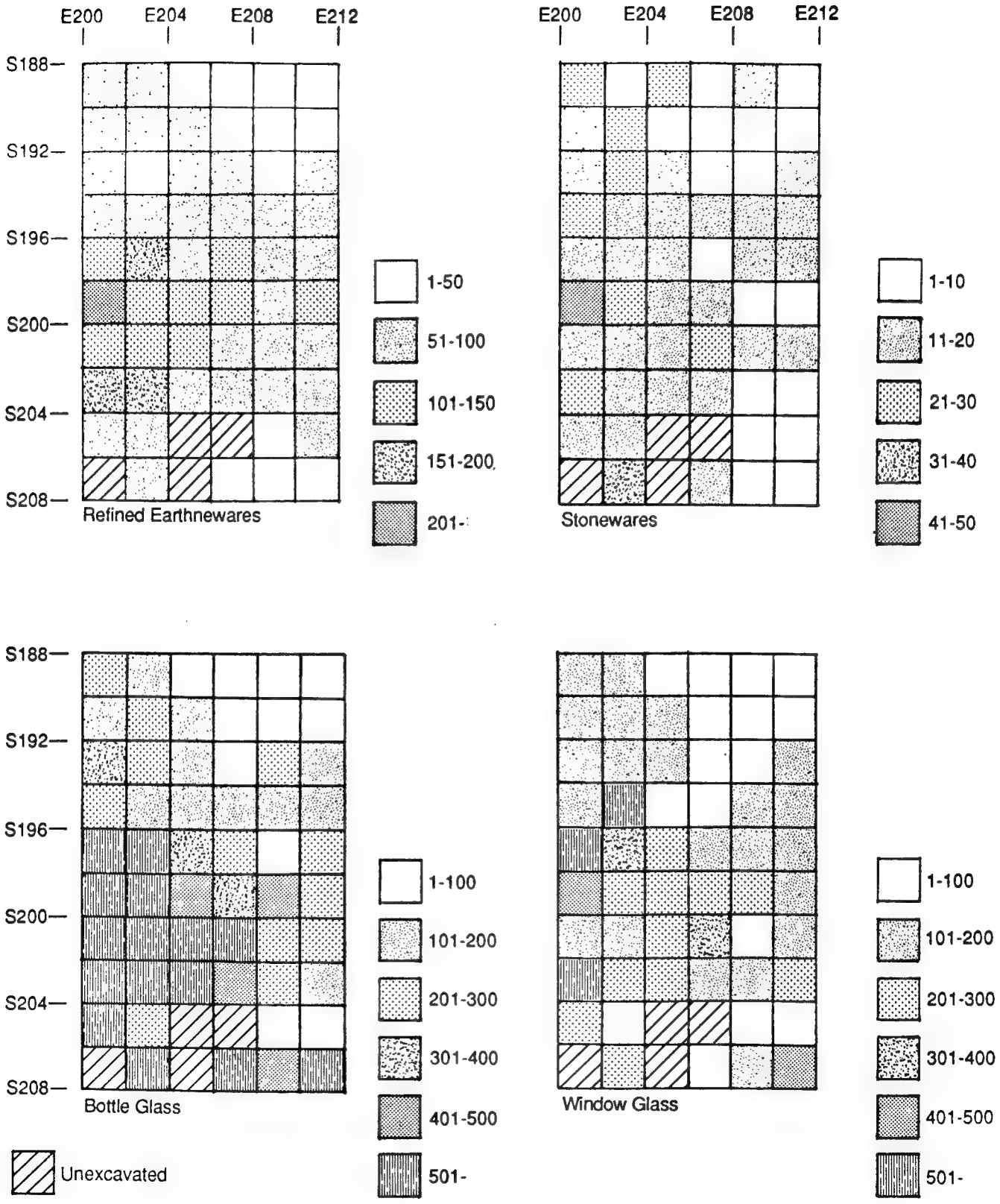



Figure 6.6 Distribution of refined earthenwares, stonewares, bottle glass, and window glass sherds in Block 1 at 41DN401.

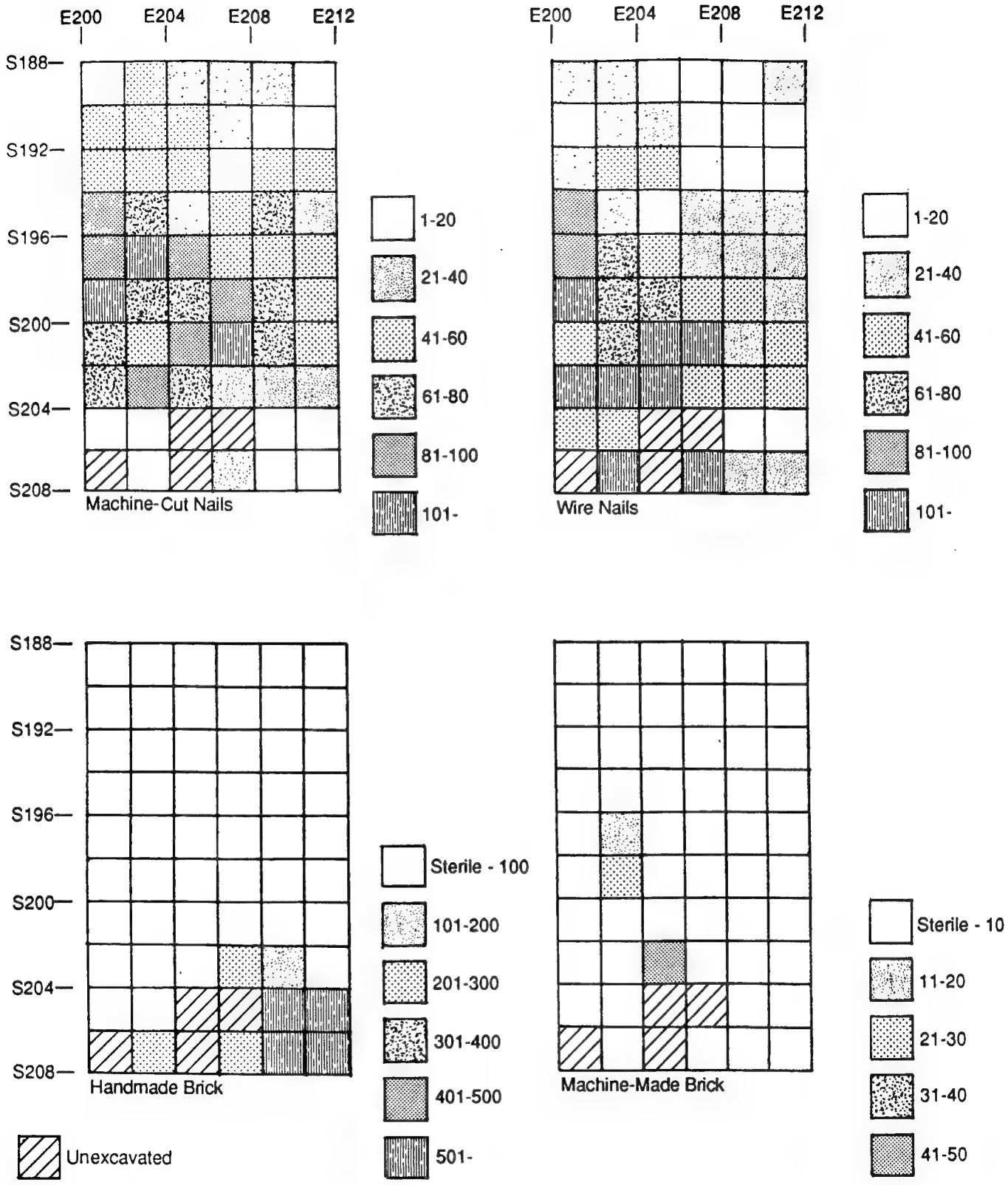



Figure 6.7 Distribution of machine-cut nails, wire nails, handmade brick, and machine-made brick in Block 1 at 41DN401.

high-density units also occur in the southeastern portion of the block. Few sherds occur in the northeast, and several low-density units occur near the house mound or south of the barbed-wire fence.

Machine-cut nails and wire nails (Figure 6.7) exhibit very similar distributions, tightly clustering in the west-central portion of the block between S194 and S204. Machine-cut nails exhibit a broader distribution within the block, but few nails occur in the south area of the barbed-wire fence near the house mound. More wire nails occur in this area, but fewer are found in the northeast corner of the block.

The frequency and distribution of hand-made bricks indicates that relatively few fragments occur north of the house mound and barbed-wire fence area within the block. These fragments are from the chimney fall located primarily in Unit O and east of Block 1 (Figures 6.8 and 6.9). Few machine-made bricks were found within the block or elsewhere on the site. These bricks may have been used for repairing damaged handmade bricks in the chimney.

Personal items also clustered primarily northwest of the house mound, north of the barbed-wire fence, overlapping the high-density ceramic, bottle glass, and nail units. Several high-density units occur south of the fence, within or adjacent to the house mound.

The distribution of total artifacts ( Figure 6.8) indicates that Block 1 is located within the sheet-refuse midden, not extending beyond it, and that the high-density area of the deposit is between S196 and S204, 4 to 12 m from the dwelling. Coupled with the data from the 1x.5-m units, the dense sheet-refuse band extends around the dwelling occurring primarily in the west, northwest, and north yard areas 4 to 12 m from the house. The sheet-refuse deposit in the front or south yard is low density.

Dating: Mean beginning dates were calculated for the site using all diagnostic, datable refined earthenware, stoneware, and bottle glass sherds recovered during the testing and mitigation phases. These dates are shown below:

| | | |
|---|---|---|
| Refined earthenwares | 1872.67 | (n=4,749) |
| Stoneware | 1874.54 | (n=778) |
| Bottle glass | 1908.33 | (n=1,182) |
| Combined | 1879.17 | (n=6,709) |

The refined earthenwares and stonewares produced very similar dates, while bottle glass indicated a much more recent date for initial occupation. These differences reflect the amount of modern bottle glass sherds and the difficultly in identifying diagnostic, datable attributes on small bottle glass fragments. The architectural data indicates a late nineteeth century construction date for the house with evidence of modification, addition, or renovation during the twentieth century. The archival information suggests the site was initially occupied in the 1870s or 1880s. The Granbury's filed for a homestead designation in 1888. A combined MBD of 1879 was obtained (see above).

Faunal Remains: A diverse collection of 18 taxa (identified to the family, genus, or species levels) indicates either a long-term occupation and/or a very active farm, whose occupants probably supplemented their livestock meat source with hunting and fishing (Table 6.3). Almost 90% of the vertebrate faunal remains were recovered from the excavation units excavated under, around, and immediately north of the house mound (Figure 6.1). From excavations in the area that would have been directly under the house, remains of small animals have been recorded; these include duck, chicken, opossum, cottontail, squirrel, and a few cut-marked large animal bones. Next to the hearth, the only horse and two of the deer elements were recovered; one deer carpal fragment was also found about 20 m north of the hearth in Unit C (Appendix A). Along the south wall of the house was a cluster of eggshells (probably chicken), remains of cottontail, cotton rat, and some pig teeth fragments.

The greatest concentration and diversity of identified vertebrates was found near the northwest corner of the house. There, as many as twelve individual taxa have been identified; these include remains of catfish, chicken and other birds, opossum, cottontail, jackrabbit, squirrel and other rodents, and many saw-cut bones. Unit M contained more cut-marked bones than any other unit, with the remainder of cut bones concentrated in the 12x12-m block northeast of the datum. In this block, there is no distinct pattern to the distribution of taxa. It appears to be dominated by refuse from butchering large mammals such as pig and perhaps cattle; however, fish and smaller game, such as those animals already mentioned, as well as naturally occurring fauna (turtles, rodents, skunk?) are scattered within this midden area.

To complete the areal distribution of faunal remains, it should be noted that outlying units yielded very few identified bones. Bones of pig, clearly the most important animal represented in this assemblage, were recorded from units 25 m west and north of the house. A raccoon bone and a large bird's rib were found in Test Unit 9 fully 35 m northwest of the house; these animals may be incidental to the occupation.

Whether such wild game as raccoons, opossum, squirrels, and rabbits were actually hunted for subsistence or brought to the site by dogs is difficult to determine. Even though few of the bones associated with these wild species show gnaw marks, carnivore and rodent gnawing was recorded on about half of the identified bone. No cut marks were observed on the remains of these animals; however, some were charred. Burning is not reliable as an indicator of human consumption activities because trash burning can result in the charring or incineration of many animals not associated with food use. Nevertheless, oral historical sources available for this area state that these wild game were hunted and consumed (Bridges 1978, Lohse 1990).

Butchered bones of large mammals dominate this faunal collection. The identification of pig and cattle suggests that the saw-cut fragments in the large mammal category are also from these domesticated species. The relative ease of raising and butchering hogs and the amount of meat generated and its preservability render pork as the meat of choice for most subsistence farmers of this time period (Howell 1981:100-102, Price 1985:48, Yates 1989). The cuts represented in this sample indicate full use of the carcasses (hams, chops, roasts, steaks). Home butchering is indicated by the presence of waste bone such as feet and teeth fragments. Therefore, estimation of status based on meat cut is not warranted here.

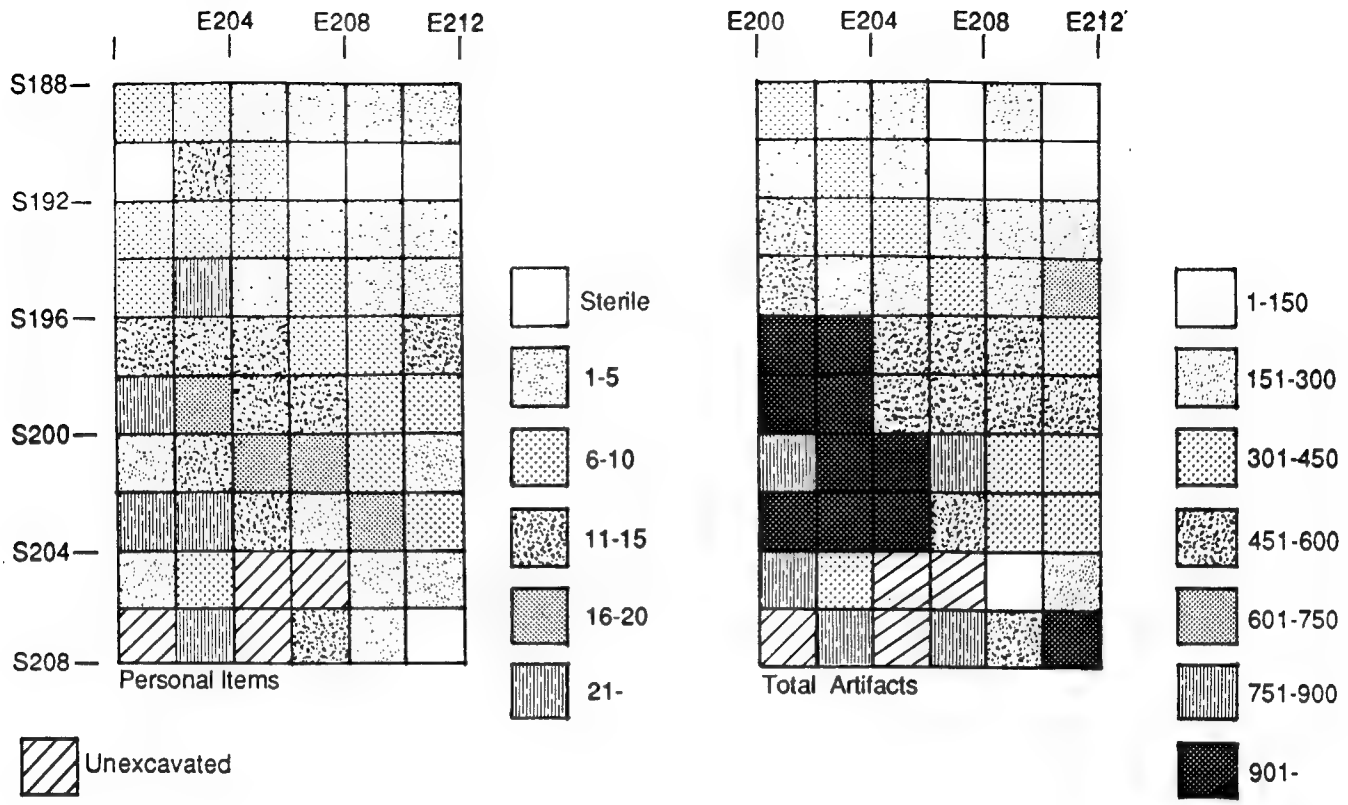



Figure 6.8 Distribution of personal items and total artifacts in Block 1 at 41DN401.

**Mitigation Summary**: Site 41DN401 is a farmstead initially occupied in the 1870s or 1880s and abandoned in the 1940s or early 1950s. The dwelling was a small structure with a handmade brick fireplace on the east end. Based on the size and orientation of the house mound, the dwelling was approximately 10m by 10m, but the exact size and shape was not determined. The relative abundance of nails indicates the dwelling was probably frame. Twentieth-century building features at the site include concrete house/porch piers, a concrete cellar, a concrete water trough, and encasement of the well.

No subsurface features were identified during testing or mitigation of the site. The well-defined sheet-refuse deposit was extensively excavated north of the dwelling in Block 1, and less intensively using 1x.5-m units in all yard areas. Data were collected under the house and the hearth was exposed and mapped in Unit R (see Figure 6.4). A detailed map of the brick scatter in Level 1 from the chimney fall was made for Unit O. One of the concrete piers is shown, along with the distribution of other building debris and domestic artifacts.

The mitigation data indicate that the sheet-refuse extends around the dwelling, with the densest areas occurring in the west and north yards four to 12 m from the house. Fewer artifacts occur in the east and south yards, and artifacts under the dwelling were predominately architectural remains. This pattern correlates with the data obtained for the Richland/Chambers Creek reservoir (Jurney and Moir 1988; Moir and Jurney 1988). While activities were undoubtedly conducted in the yard at distances further than 12 m from the house, they were less intense and resulted in a lower density of material being deposited. Further, while a variety of tasks were conducted near the house such as cooking, washing, and making soap, the activities conducted in other yard areas are of considerable importance, but less well documented. Gardens, outhouses, hog-butchering areas, chicken yards, and other buildings or defined yard spaces occur at varying distances from the dwelling. Gardens and outhouses, as well as outbuilding locations no longer defined by structural remains -- i.e., fences, foundations, or standing architecture, are more difficult to identify in the archaeological record than the dwelling and a higher-density sheet-refuse midden. As a consequence, these activities are poorly understood for many archaeological farmsteads in this region. This problem is evident at 41DN401

The major outbuildings at 41DN401 are poorly represented in the archaeological record. No sheds or barns remained standing and none were discerned during excavations. This pattern is repeated at other farmsteads in the Ray Roberts Lake and Lewisville Lake areas. Excavation in standing or collapsed outbuildings at Ray Roberts Lake failed to recover significant data for identifying outbuilding areas at sites when no surface evidence of outbuildings occurs. In addition, in the absence of surface remains, it is difficult to predict where these structures occurred.

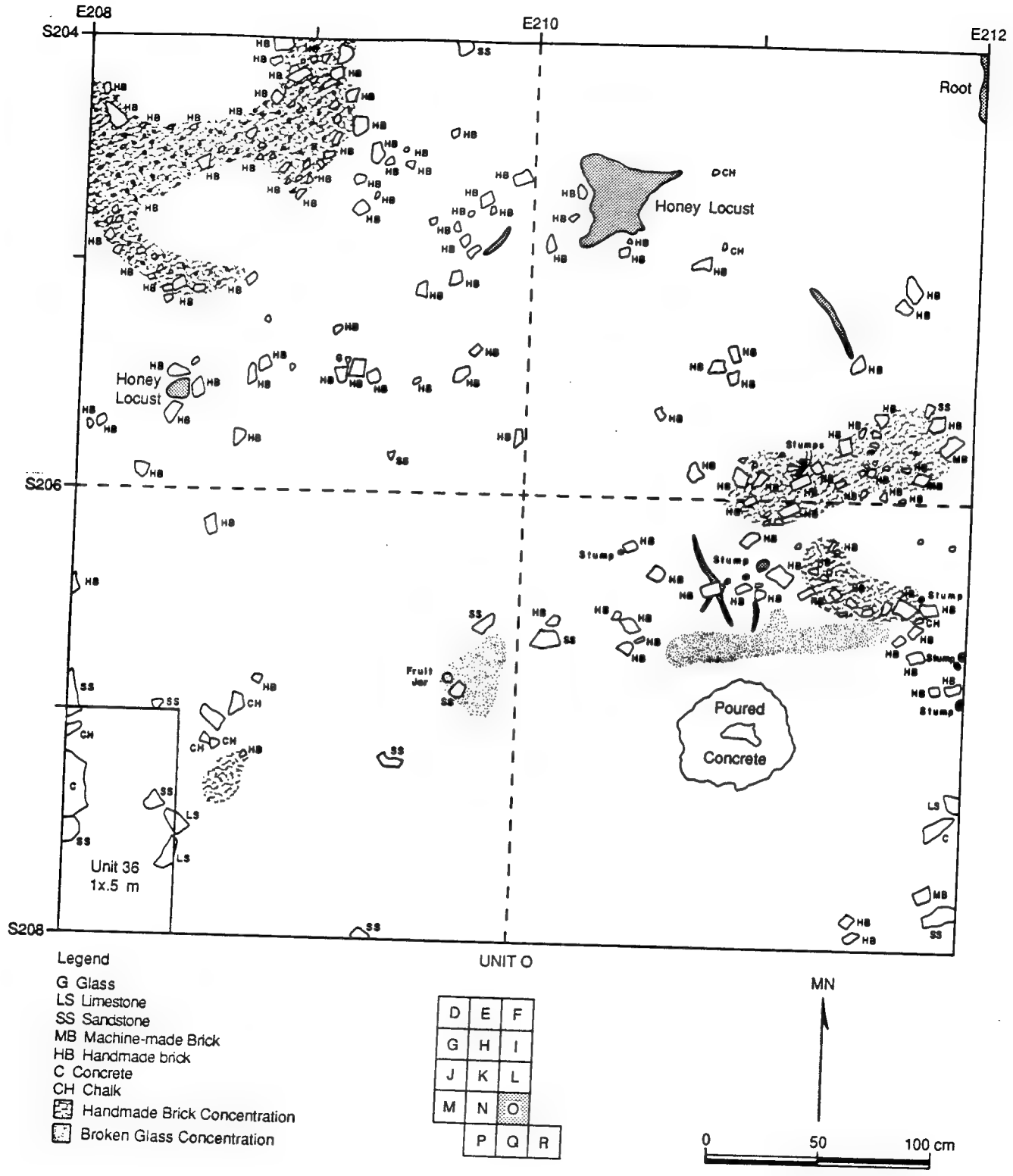



Figure 6.9 Map of Unit O in Block 1 at 41DN401.

Table 6.3

Identified Vertebrates and
Bone Counts from 41DN401

| Taxon | NISP | MNI |
|---|---|---|
| Gar (*Lepisosteus* sp.) | 1 | 1 |
| Catfish (Ictaluridae) | 1 | 1 |
| Carp (*Cyprinus carpio*) | 3 | 1 |
| White crappie (*Pomoxis annularis*) | 1 | 1 |
| Fish, indeterminate | 4 | - |
| Box turtle (*Terrapene* sp.) | 2 | 1 |
| Turtle, indeterminate | 3 | - |
| Chicken (*Gallus gallus*) | 5 | 1 |
| Mallard (*Anas platyrhynchos*) | 1 | 1 |
| Bird, large | 2 | - |
| Bird, medium (incl. 4 eggshells) | 8 | - |
| Opossum (*Didelphis virginianus*) | 11 | 2 |
| Cottontail (*Sylvilagus floridanus*) | 25 | 3 |
| Jackrabbit (*Lepus californicus*) | 2 | 1 |
| Fox squirrel (*Sciurus niger*) | 7 | 1 |
| Cottonrat (*Sigmodon hispidus*) | 2 | 1 |
| Rodent, indeterminate | 2 | - |
| Skunk (cf. *Mephitis mephitis*) | 1 | 1 |
| Raccoon (*Procyon lotor*) | 1 | 1 |
| Carnivore, indeterminate | 1 | 1 |
| Pig (*Sus scrofa*) | 38 | 1 |
| Horse (*Equus caballus*) | 1 | 1 |
| Cattle (*Bos taurus*) | 5 | 1 |
| Deer (cf. *Odocoileus virginianus*) | 4 | 1 |
| Mammal, large | 88 | - |
| Mammal, medium | 6 | - |
| Mammal, small | 2 | - |

Total Bone = 868 (includes bone collected during testing and mitigation)
ID = 227 (26%) (12 burned)
unid = 641 (86 burned)

Archaeological data, however, from these reservoirs (Lebo 1990) indicate that these structures existed at many farmsteads although they are not often identified in the archaeological record. Farming in this region was diversified and many outbuildings were utilized by tenants, and large and small farmers alike. Among these outbuildings were sheds, chicken coops, cellars, and pens. Barns for housing animals were not common.

At 41DN401, the only outbuilding remaining was a concrete cellar built in the twentieth century, which may have replaced an earlier earthen cellar. Both the cellar and the well/windmill were located within 15m of the southwest corner of the dwelling. Undoubtedly, however, given the diversified farming characteristic of this region and the variety of outbuildings recorded at farmsteads with extant architecture at Ray Roberts Lake, the occupants at 41DN401 probably had a garden, at least one shed and a chicken coop.

In summary, 41DN401 was occupied from the 1870s or 1880s to the late 1940s or early 1950s. Extant features included the house mound, collapsed chimney, the hearth, dwelling piers, a concrete cellar, a capped well and a windmill foundation. Mitigation was conducted to recover information on the sheet-refuse deposit, features, and the dwelling.

## 41DN404

| | |
|---|---|
| Map Quad | Little Elm 7.5', #3396-223 |
| Elevation above MSL | 520-530' |
| Vegetation | Cottonwood, Willow, Greenbriar, Grasses |
| Cultural Affiliation | Historic (ca. 1870-1930) |

**Description**: The site is located in the southwestern part of Lewisville State Park, approximately 235 m southwest of 41DN403. The current site area is estimated to be 35m north-south by 60m east-west, and the western portion has been removed by extensive beach erosion and a two-track road. The only surface feature found during survey was a handmade brick and sandstone scatter. It did not appear to be disturbed and was identified as the probable location of the former dwelling (Figure 6.10). Erosion and a dirt two-track road have impacted the western site area. No post-occupation dumping was noted. No well or other surface features were evident during survey. Surface artifacts were sparsely distributed across the site, including bottle glass, ironstone and whiteware ceramics, salt glazed and natural clay slipped glazed stonewares, and handmade brick fragments with ash glazing, yielding a date range of ca. 1870 to 1930.

**Archival Investigations**: Site 41DN404 is situated on the J. H. Perry survey A-1058 (Figure 6.11), which was granted in 1870. He owned the property until 1890 when he sold it along with improvements to E. C. Venable. This tract changed ownership a number of times between 1890 and 1914 (Table 6.4), when it was purchased by J. Sparks and his wife, Sallie as their homestead. Site 41DN403 is also located on this tract. Both sites are shown on the 1918 map, but 41DN404 is not on the 1936 or 1946 maps. It is probable that the 1914 Sparks homestead is located on 41DN403.

**Previous Investigations**: This site was recorded during the 1986-87 survey, and fieldwork involved the excavation of ten shovel test pits and recovery of a grab sample of diagnostic surface artifacts. The shovel test pits were sterile and indicated a shallow A-horizon.

Testing included eight 1x.5-m test units, nine 1x1-m units, two hand-excavated test trenches, two backhoe trenches, and feature exploration in two areas of the site using machine excavation to remove the A-horizon. The 1x.5-m units were judgmentally placed to maximize site coverage. The 1x1-m units were located to test two features encountered in 1x.5-m units. Backhoe Trench 1 was dug to examine subsurface integrity and for feature exploration. Backhoe Trench 2 was judgmentally placed to bisect a feature exposed in Unit 2 (Figure 6.12).

The artifact assemblage recovered during testing is presented in Brown and Lebo (1990) and the data are incorporated into Table C.2. These data indicate that two spatially separate, but contemporaneous activity areas or farmsteads occur at the site. The units placed between these two areas (4, 5 and 8) contained either an extremely low density sheet-refuse deposit or were sterile. Units 3 and 7 appear to be on the periphery of the site (see Figure 6.10).

Based on the artifact assemblage recovered during the testing phase, the farmstead was assigned a date range of ca. 1870 to the early 1900s. Surface features include a

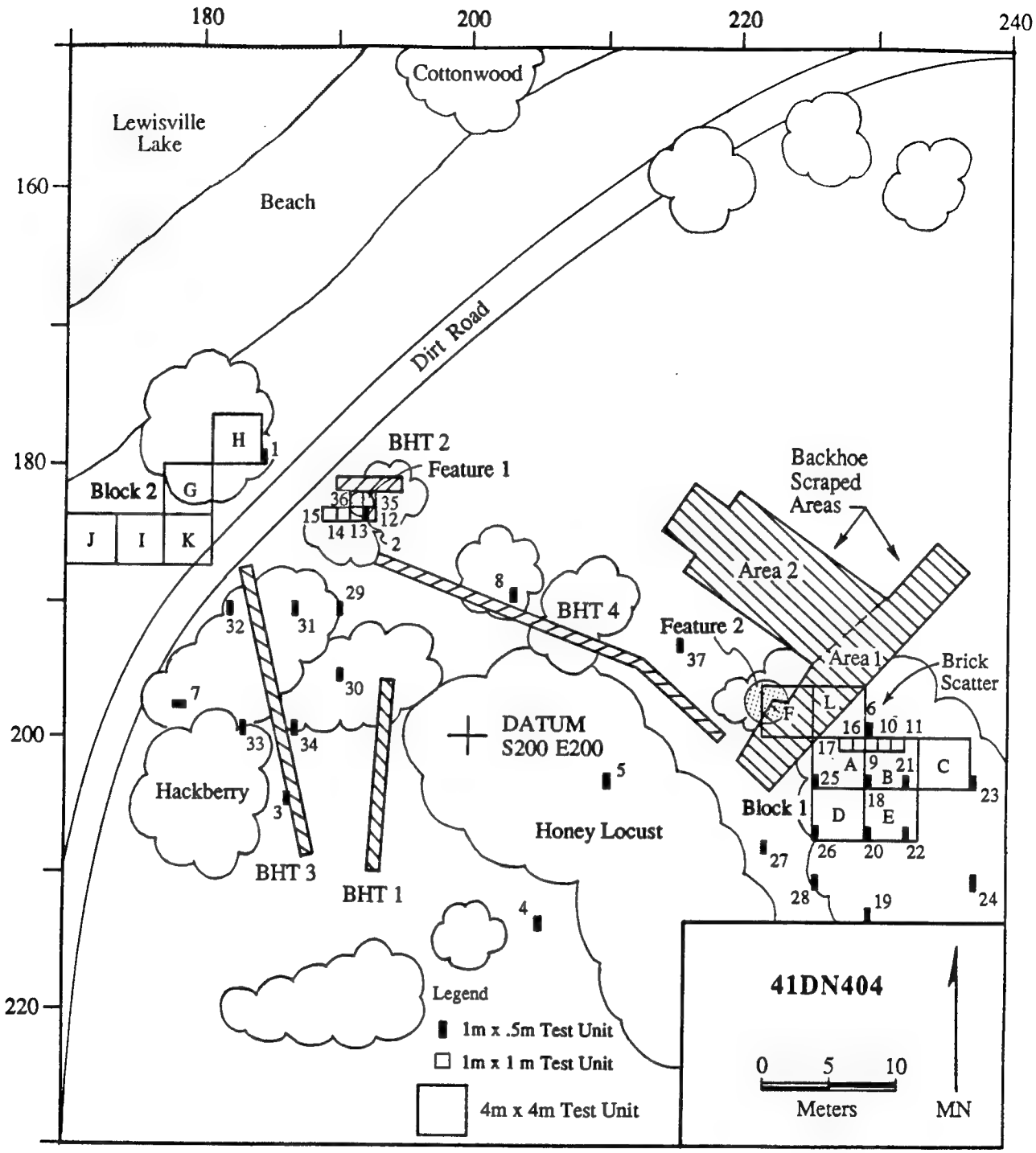



Figure 6.10 Site map for 41DN404.

Table 6.4

Land Tract History for Site 41DN404

John H. Perry survey A-1058

| Date | Grantor | Grantee | PriceLand Description | Reference |
|---|---|---|---|---|
| 1870 | State of Texas | J. H. Perry | 90.47 ac survey; homestead | G/40 |
| 1890 | J. H. Perry and wife L. E. | E. C. Venable | $1,500. 90.47 ac; entire survey with improvements | 41/305 |
| 1893 | E. C. Venable and wife C. R. | Texas Loan Agency | $1.90.47 ac. [forgive note] | 47/467 |
| 1901 | London Hardware Co. | J. W. Moorman | $100.90.47 ac. [assume notes] | 80/578 |
| 1901 | J. W. Moorman and wife M. G. | M. A. Daugherty and husband J. E. | $1,750. 90.47 ac. | 81/579 |
| 1905 | J. E. Daugherty and wife Mary A. | J. Sparks | $2,020. 90.47 ac. | 98/529 |
| 1907 | J. Sparks and wife Sallie E. | J. D. Pinckard and J. M. Saunders | $3,000. 90.47 ac. | 101/479 |
| 1911 | J. D. Pinckard and J. M. Saunders, et al. | J. Sparks | $3,500. 90.47 ac. | 119/209 |
| 1914 | J. Sparks and wife Sallie E. | [file for homestead] | 250 ac; including J. H. Perry survey, 40 ac. of J. L. Sparks survey, and 119 ac. of A. J. King survey | 133/361 |
| 1920 | J. Sparks and wife Sallie E. | Maxwell Inv. Co. (J. E. McPherson Trustee) | $12,000. 250 ac.; same as above [note] | 67/591 |
| 1920 | Maxwell Investment Co. of Missouri | Central Life Assurance Co. | Transfer 250 ac; same as above | 175/525 |
| 1939 | Central Life Assurance Society of Iowa | J. B. McEntire | $8,500. 250 ac; same as above | 275/525 |
| 1952 | Maud S. McEntire | USA | $167,700. 466.70 ac; including the J. H. Perry survey (A-1058) | 382/127 |

press-molded brick scatter in the southeastern site area. This scatter and the moderate-density sheet-refuse deposit in this area indicate an early house area.

A buried ash deposit, a possible kitchen or kitchen-dumping area was located in the northwest part of the site and was designated Feature 1 (Figure 6.10). It is a filled pit containing several layers of ash and charcoal. No structures were found in this area of the site. Based on the spatial separation of the two areas, it was hypothesized that two house areas may be represented by the remains at the site.

In summary, the site contains several intact features, including a brick scatter associated with a dwelling in the southeastern site area and a kitchen-related deposit in the northwest. The sheet-refuse deposit is low density, and the western portion of the site has been truncated. The site exhibits good integrity and meets the criteria for eligibility for nomination to the National Register of Historic Places. It is a short-term farmstead and is one of only two well-preserved farmsteads in the project area initially occupied before 1880.

**Mitigation Methods**: Mitigation included excavation of 17 1x.5-m units, 12 4x4-m units, 2 1x1-m units, backhoe trenches 3 and 4, and partial removal of Feature 2 (kitchen or kitchen-related trash dump). The 1x.5-m units were judgmentally placed across the site to recover additional sheet refuse data. Emphasis was placed on increasing coverage in the southeastern site area, where a house location was identified during testing, as well as the area south of BHT 2. This second location contained domestic debris suggesting a second house location. Several units were also excavated between these two areas, where testing data indicated little or no sheet refuse deposits.

The 4x4-m units were excavated in two blocks, one was located in the northwest and the second was in the southeastern site area. Block 1, in the southeast, contained Units A through F, and Unit L. Block 2 contains Units G through K. It was placed west of BHT 2 and the dirt road to recover an exposed surface artifact concentration. Because of the shallow nature of the cultural deposits, both blocks were excavated to 10 cm below surface. Block units were subdivided into 2x2-m quads, which were excavated separately. Block 1 was dug to expose features, recover sheet refuse deposits, and to recover architectural remains.

All four quads in Units A, B, D, and E in Block 1 were excavated. Only the NW and SW quads of Unit C were excavated. Unit F and the NW quad, and parts of the NE and SW quad of Unit L were largely removed by Backhoe Scraped Area 1.

Two 1x1-m units, Units 35 and 36, were excavated to further expose and recover data from Feature 1. Feature 2, located northwest of the house area in Block 1 was partially excavated. The boundaries of the feature were defined by the vertical and horizontal extent of the ash, charcoal, and

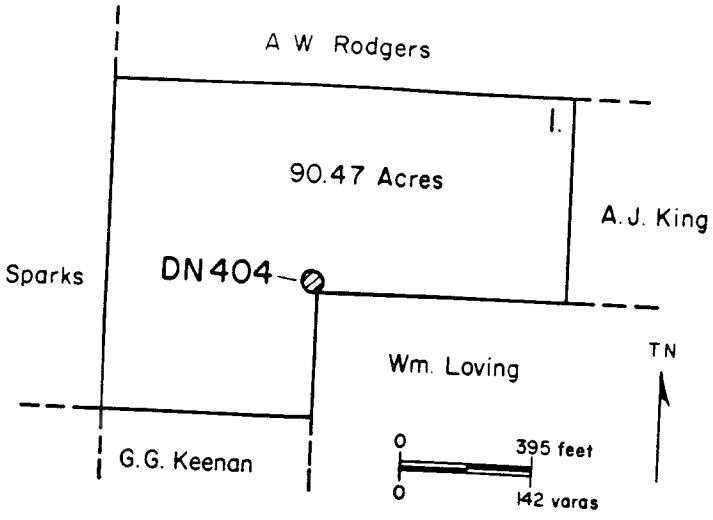



Figure 6.11 Location of site 41DN404 on Tract 1 of the J. H. Perry survey, A-1058.

burned sediment, and later a hand-excavated trench was dug to bisect the feature and expose a profile for mapping (see Figures 6.13 and 6.14).

The backhoe trenches were dug to search for buried features and evidence of structures or subsurface deposits in the northwest and southeast site areas. The material in BHT 3 was minimal, reflecting a very low density, shallow sheet refuse deposit. No features or structural evidence of a second house area were found in either trench.

**Mitigation Results**: The artifact assemblage obtained during mitigation is shown by unit type in Table 6.2, along with the material from testing. These data indicate two spatially separated sheet-refuse deposits at the site, corresponding with the northwest and southeast site areas. The type and relative age of the material from the two areas are similar. However, the relative artifact frequencies differ (Table 6.5).

These data indicate that architectural remains dominate in the southeast area, where a brick scatter and well-defined house area occur. Architectural remains represent 74.58% of the artifacts from this area compared with only 39.67% from the northwest site area. However, it is important to note that the frequency of architectural remains in the northwest area suggests that a structure was located in this area. The frequency of window glass sherds, nails, and brick support theinterpretation that this structure was a house rather than an outbuilding. Feature 1, discussed below, is a kitchen or smokehouse-related deposit located east of Block 2 in the northwest area.

Based on the nail, brick, and window glass counts for the northwest area, the structure was probably small, with few windows. Machine-cut nails total 77.29% indicating the structure was ca. 1870s or 1880s, and probably received little later modification. The southeast house contains 54.24% machine-cut nails, primarily handmade or transitional press-molded bricks, and a considerable number of mortar fragments. This structure also dates to the late nineteenth century, but probably received some modification during the early twentieth century.

When architectural remains and tin can fragments are excluded from the counts, all the remaining categories exhibit very similar frequencies between both site areas (Table 6.6; note: the counts are provided in Table 6.5). Bottle glass and refined earthenwares dominate in both areas. The only significant difference is the frequency of stonewares, which are twice as frequent in the northwest area, and the frequency of "other" vessel glass (table, lamp, and unidentified). Both household and farm-related items occur in the two areas.

Artifact Distributions: Using the data from the 1x.5-m units and the 1x1-m units, density maps were produced for each major artifact category. The values shown on these maps were calculated per 1x.5-m unit. Data from the 1x1-m units were divided in half and included in the construction of these maps. Features 1 and 2 were also included in these maps, while separate density maps were produced for Level 1 of Blocks 1 and 2.

Table 6.5

Comparison of the Artifact Assemblages from the Northwest and Southeast Site Areas, Excluding Features 1 and 2

| Category / Area | Northwest Area | | Southeast | |
|---|---|---|---|---|
| | N | % | N | % |
| Semi-coarse Earthen. | 1 | 0.07 | 1 | 0.01 |
| Refined Earthenwares | 155 | 10.23 | 257 | 3.65 |
| Stonewares | 57 | 3.76 | 51 | 0.72 |
| Porcelain | 5 | 0.33 | 12 | 0.17 |
| Bottle Glass | 413 | 27.26 | 1049 | 14.76 |
| Table Glass | 11 | 0.73 | 69 | 0.97 |
| Lamp Glass | | | 21 | 0.30 |
| Unid. Glass | 53 | 3.50 | 10 | 0.14 |
| Window Glass | 113 | 7.46 | 147 | 2.07 |
| Machine-cut Nails | 245 | 16.17 | 384 | 5.40 |
| Wire Nails | 72 | 4.75 | 324 | 4.56 |
| Handmade Brick | 117 | 7.72 | 3107 | 43.71 |
| Machine-made Brick | | | 201 | 2.83 |
| Building Material | 54 | 3.56 | 1138 | 16.01 |
| Personal Items | 24 | 1.58 | 69 | 0.97 |
| Thin & Heavy Metal | 32 | 2.11 | 73 | 1.03 |
| Tin Cans | 120 | 7.92 | 104 | 1.46 |
| Household Items | 13 | 0.86 | 42 | 0.59 |
| Machine & Wagon | 2 | 0.13 | 14 | 0.20 |
| Metal Hardware | 8 | 0.53 | 11 | 0.15 |
| Tools | 2 | 0.13 | 5 | 0.07 |
| Ammunition | 2 | 0.13 | 5 | 0.07 |
| Horse & Stable | 15 | 0.99 | 11 | 0.15 |
| Electrical | 1 | 0.07 | 3 | 0.04 |
| Total | 1515 | 99.99 | 7108 | 100.00 |

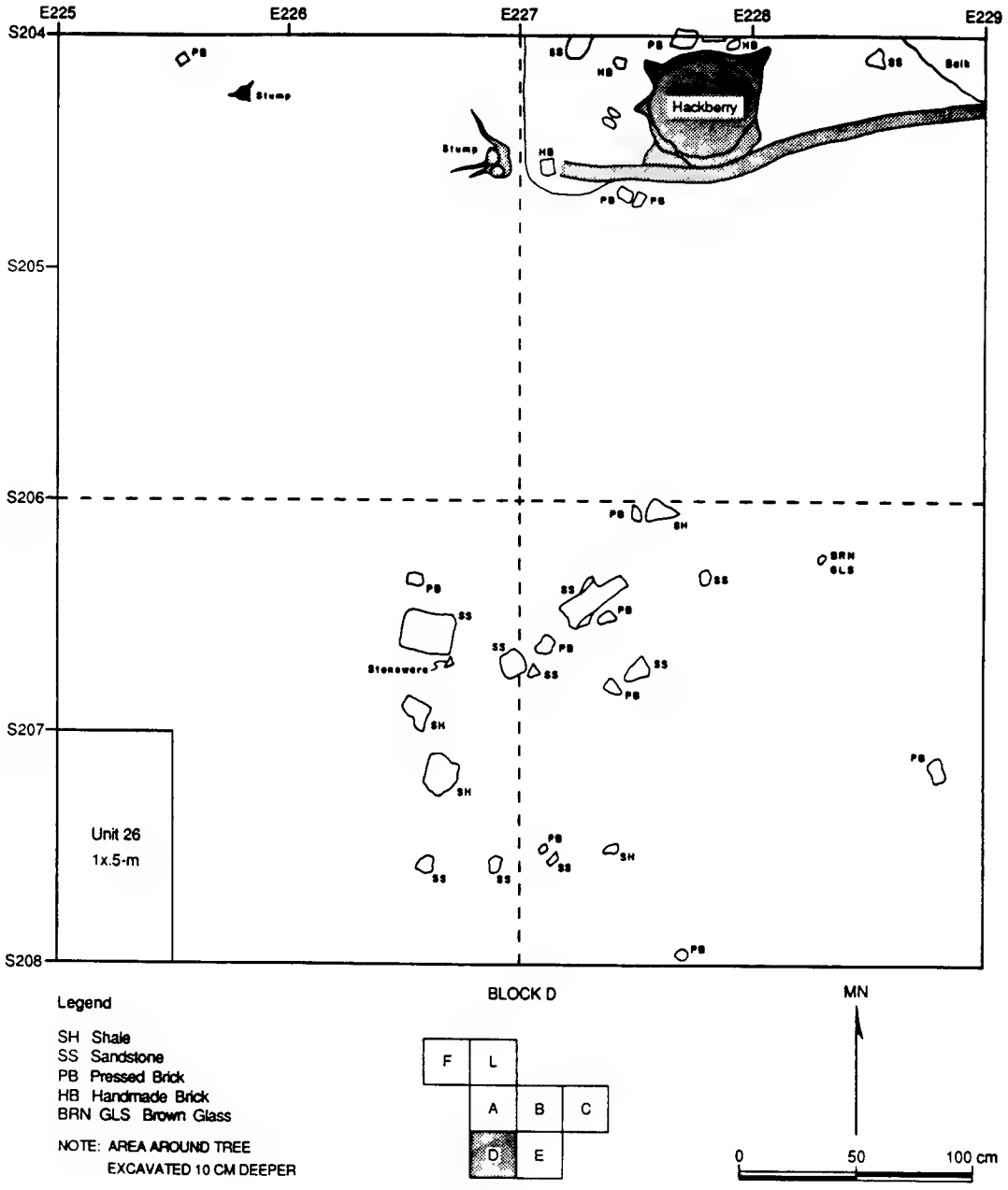



Figure 6.12 Planview of Feature 1 at 41DN404.

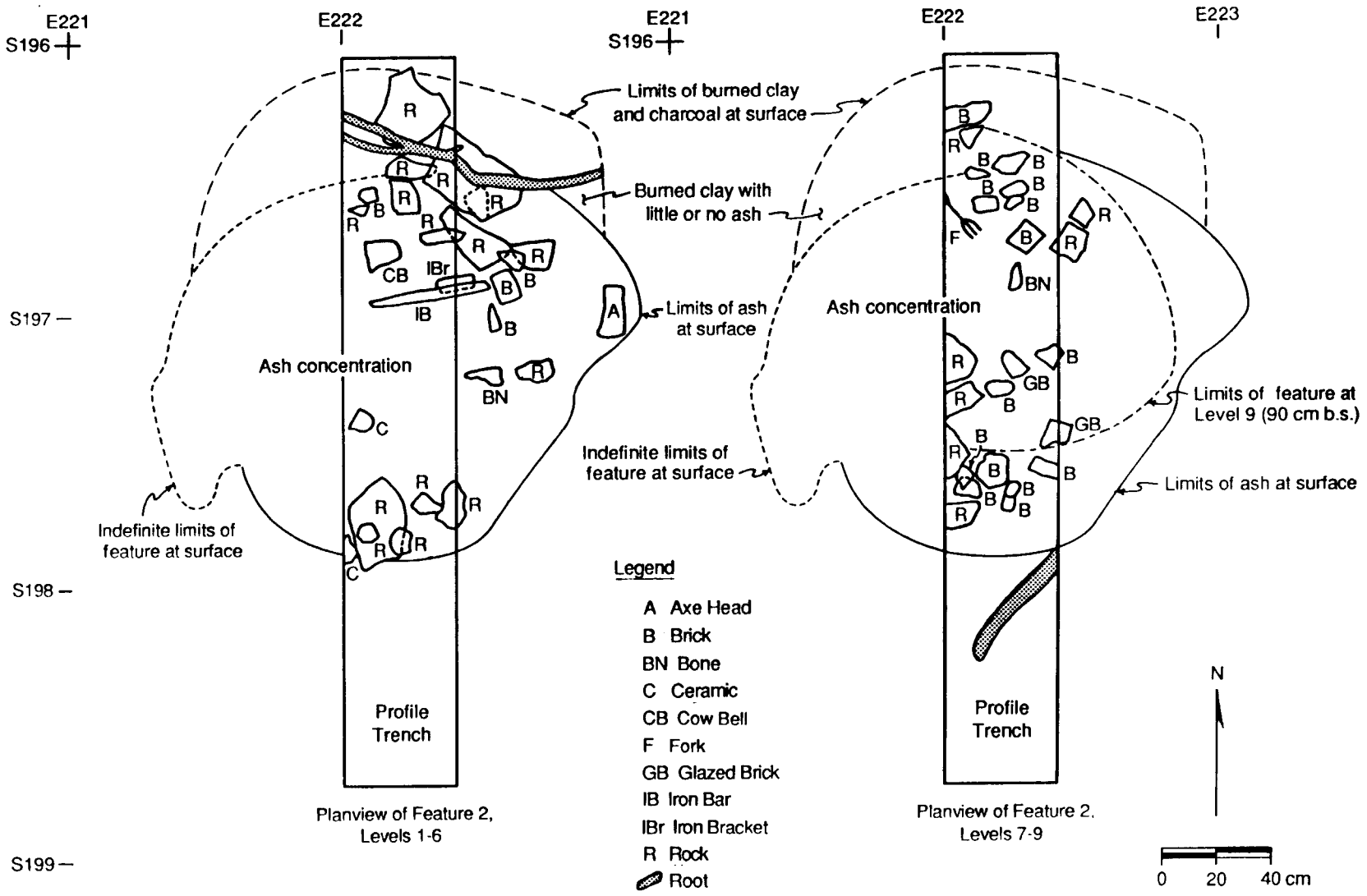



Figure 6.13 Planview of Feature 2 at 41DN404.

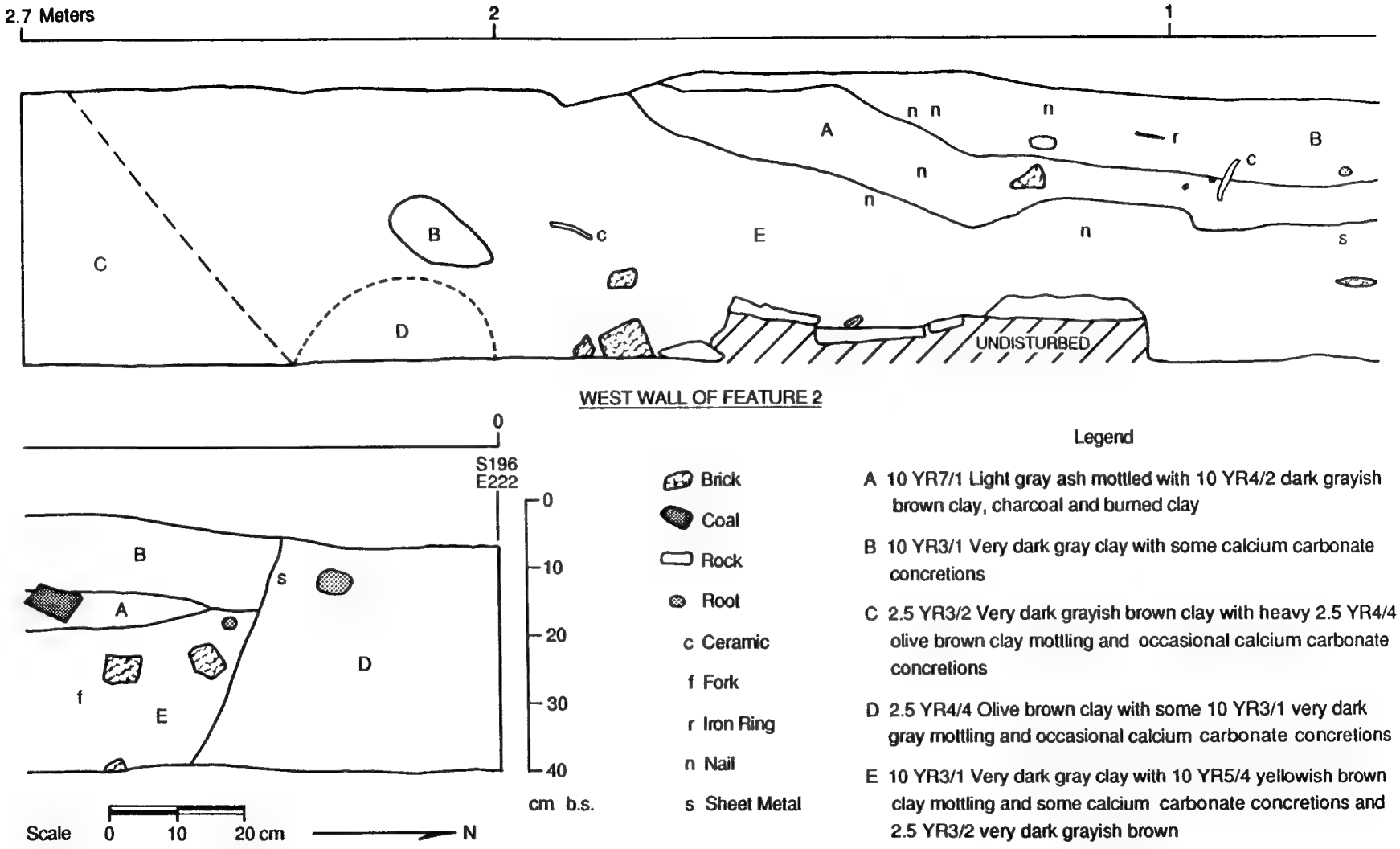



Figure 6.14 Profile of Feature 2 at 41DN404.

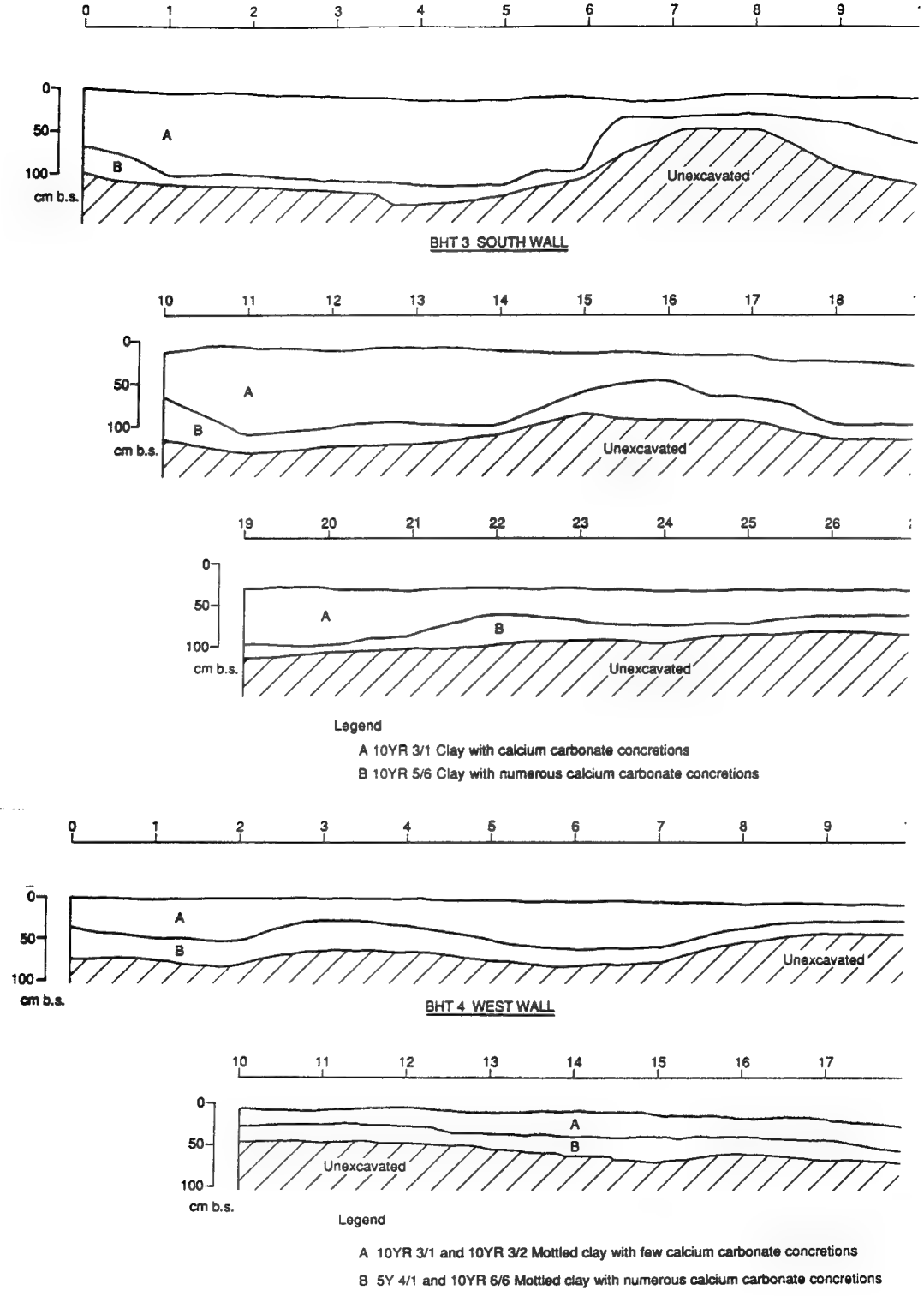



Figure 6.15 Profiles of backhoe trenches 3 and 4 at 41DN404.

Table 6.6

Comparison of the Artifact Assemblages from the Northwest and Southeast Site Areas, with the Site Total Excluding Features 1 and 2, Architectural Items and Tin Can Fragments

| Category | NW Area % | SE Area % | Site Total % |
|---|---|---|---|
| Semi-coarse Earthenwares | 0.13 | 0.06 | 0.07 |
| Refined Earthenwares | 19.52 | 15.09 | 19.27 |
| Stonewares | 3.76 | 2.99 | 4.19 |
| Porcelain | 0.33 | 0.70 | 0.57 |
| Bottle Glass | 27.26 | 61.60 | 55.34 |
| Table Glass | 0.73 | 4.05 | 2.91 |
| Lamp Glass | 0.00 | 1.23 | 0.74 |
| Unid. Glass | 3.50 | 0.59 | 3.01 |
| Personal Items | 3.02 | 4.05 | 3.41 |
| Thin & Heavy Metal | 4.03 | 4.29 | 4.94 |
| Household Items | 1.64 | 2.47 | 2.00 |
| Machine & Wagon | 0.25 | 0.82 | 0.54 |
| Metal Hardware | 1.01 | 0.65 | 1.15 |
| Tools | 0.25 | 0.29 | 0.27 |
| Ammunition | 0.25 | 0.29 | 0.30 |
| Horse & Stable | 1.89 | 0.65 | 1.18 |
| Electrical | 0.13 | 0.18 | 0.10 |
| Total | 100.02 | 100.00 | 99.99 |

1x1-m and1x.5-m Units: The distributions of refined earthenwares, stonewares, bottle glass, and window glass sherds from the 1x1-m and1x.5-m units are shown in Figure 6.16. These data indicate that low-density sheet-refuse deposits and architectural remains cluster in the northwest and southeast site areas. No significant differences in artifact frequencies is evident among the two areas, excluding the brick and mortar concentration in the southeast area. The distribution of refined earthenwares in each area suggests that the structures were located in the two blocks, Block 1 in the southeast and Block 2 in the northwest. The major sheet-refuse bands are south of these structures and Features 1 and 2.

Block 1: The architectural remains, and where possible, the artifacts, were piece plotted in Block 1. Plots for Units A, B, and L are shown in Figures 6.17 to 6.19. These data indicate that the brick scatter and artifact concentration occurred primarily in these units, with decreasing frequencies elsewhere in the block. The exact location of the dwelling, as well as its size and orientation was not determined. However, the house was most probably located in the same area as the brick scatter and extended to the north.

The distributions of refined earthenwares, stonewares, bottle glass, machine-cut nails, and wire nails in Block 1 (Figure 6.20) will be discussed below. The refined earthenwares clustered in Unit A and extended from the probable house location up to at least 20m away based on the 1x1-m and 1x.5-m unit data shown in Figure 6.16.

The stonewares from Block 1 clustered closer to the dwelling than expected based on data obtained from other sites in the project area, as well as from other reservoirs in the region (Ray Roberts Lake and Richland/Chambers Creek). Data from these reservoirs (Jurney and Moir 1988; Lebo 1988, 1991; Moir and Jurney 1988) indicate that stoneware sherds generally cluster further from the house than refined earthenwares and are often more frequent than refined earthenwares in outbuilding areas. However, when the distributions of stonewares and refined earthenwares (see Figure 6.16) are compared, stonewares have a more restricted distribution, and cluster closer to the probable dwelling locations in both site areas. However, it should be noted that while the distribution of these two artifact categories overlap in Block 1, they exhibit different clustering.

Bottle glass sherds (see Figures 6.16 and 6.20) also cluster close to the dwelling in the southeast area. The major concentration occurs in Unit A. This pattern is visible in both the 1x1-m and 1x.5-m units and Block 1 data. While no clustering was evident for window glass sherds in the 1x1-m and 1x.5-m units, a definable concentration was defined in Block 1. Window glass sherds were absent in Unit L, clustered in Units A and B near the dwelling and may indicate proximity of a window. Sherds were less frequent in the northeast and southwest parts of the block. Machine-cut and wire nails overlapped in distribution, and both clustered in Units A and B near the dwelling. Wire nails were recovered from more units than machine-cut nails and included moderate frequencies west of the house in Unit L, as well as south of the dwelling.

Block 2: While variability is evident in the density distribution of major artifact categories in Block 2 (Figures 6.22 and 6.23), these remains represent a low-density sheet-refuse deposit. No features, including evidence of a structure were found in Block 2. Artifacts are more prevalent in the eastern half of the block. However, if the size of these units is taken into consideration (7 times larger than a 1x.5-m unit), the results indicate that no major clustering occurs in Block 2. Refined earthenwares cluster in Units 7 and 32, and Feature 2. Similar results are indicated for the other artifact categories shown in Block 2, with each category representing low-density sheet-refuse.

Features: Two features were identified and partially excavated. Feature 1 was exposed in Unit 2 during the testing phase. Additional units were opened to expose the horizontal extent of Feature 1. These include Units 13, 14, and 15, all 1x1-m units. Units 2 and 12 were 1x.5-m units. Each were dug in 10 cm levels. The artifacts recovered from these units are shown in Table 6.7.

During the mitigation phase, Feature 1 was excavated as a single unit designated Unit 50. It was excavated in 5 cm levels and included parts of test units 2, 12, 13, and mitigation Units 35 and 36. The entire matrix extending from 15 cm to 40 cm below surface was bagged by level for fine screening. A planview of Feature 1 is shown in Figure 6.12. The north and west boundaries of the feature were not clearly defined. The feature does not extend into BHT 2 (see Figure 6.10).

Feature 1 is a circular, poorly defined basin-shaped depression containing primarily architectural remains, ceramics, and bottle glass sherds (Table 6.8). The upper 10 cm is a dense ash lens with some charcoal overlain by a thin veneer of recent sediments. The ash continued into Level 2, but Levels 3 and 4 contained ash in the west half and burned sediments in the east. In Level 5 the burned earth had covered most of the feature, with only ash still present in the western half. Maximum dimensions for Feature 1 are approximately 170cm north-south and 205 cm east-west.

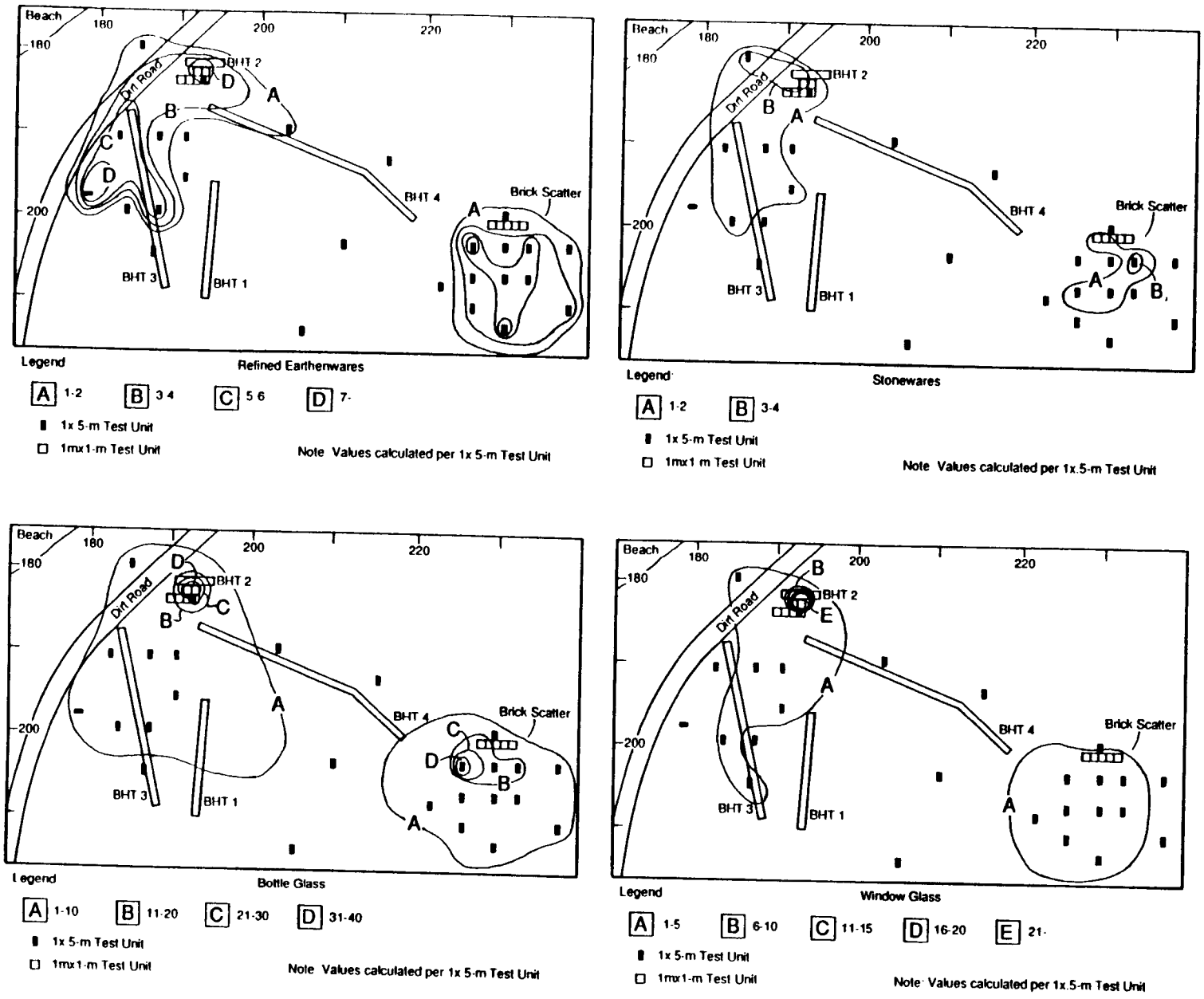



Figure 6.16 Distribution of refined earthenwares, stonewares, bottle glass, and window glass sherds at 41DN404 based on artifacts recovered from 1x.5-m and 1x1-m units.

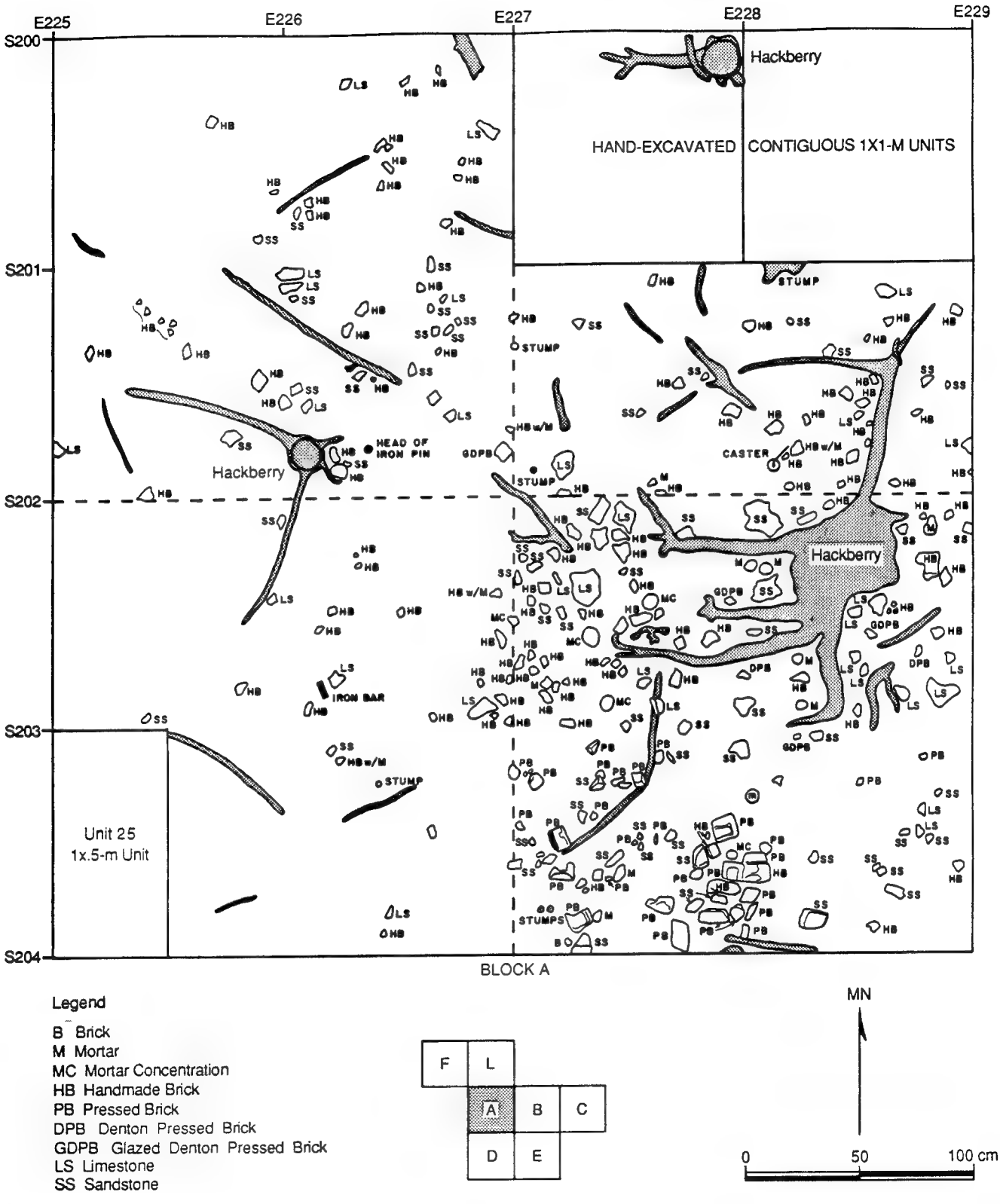



Figure 6.17 Map of Unit A in Block 1 at 41DN404.

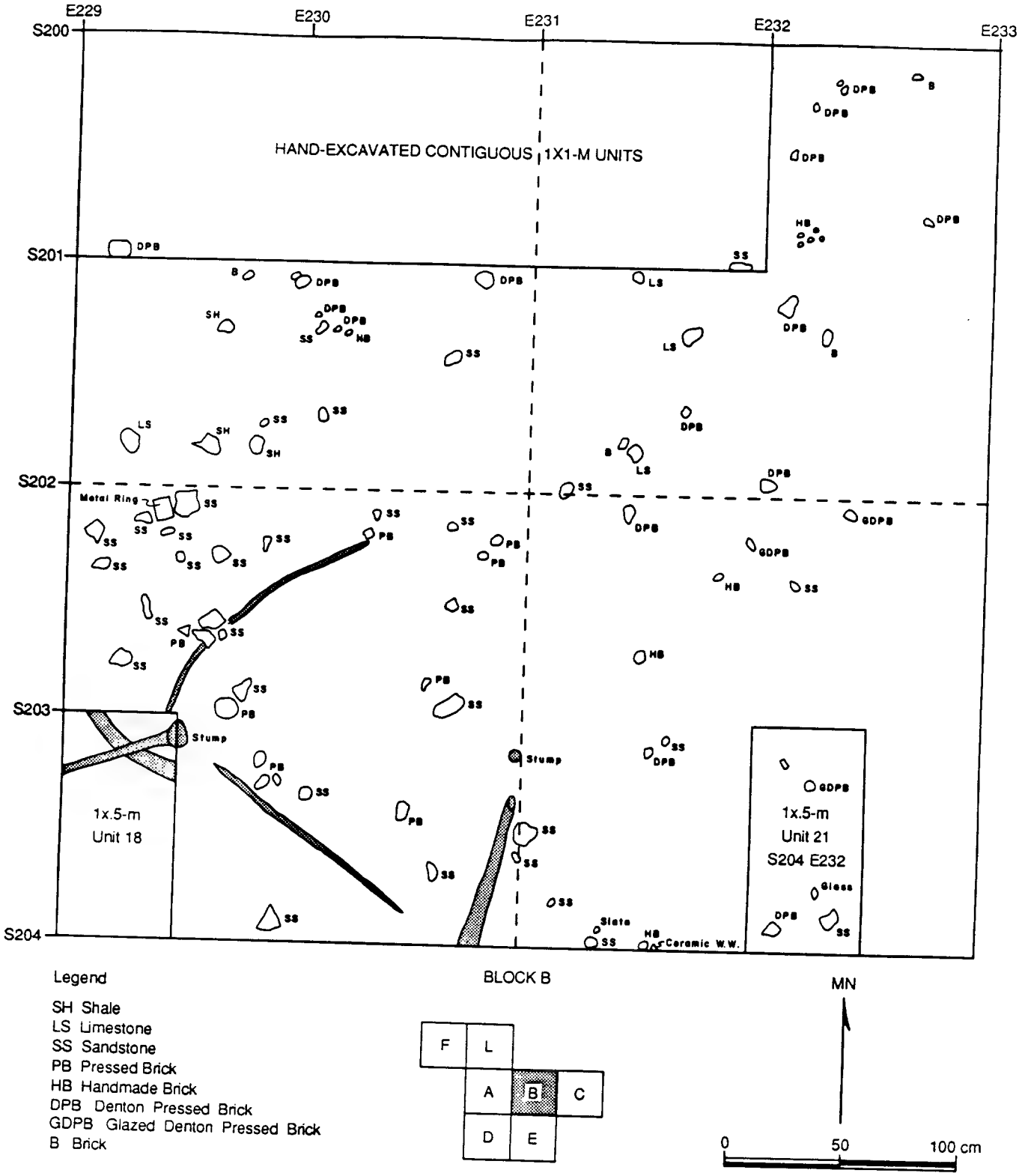



Figure 6.18 Map of Unit B in Block 1 at 41DN404.

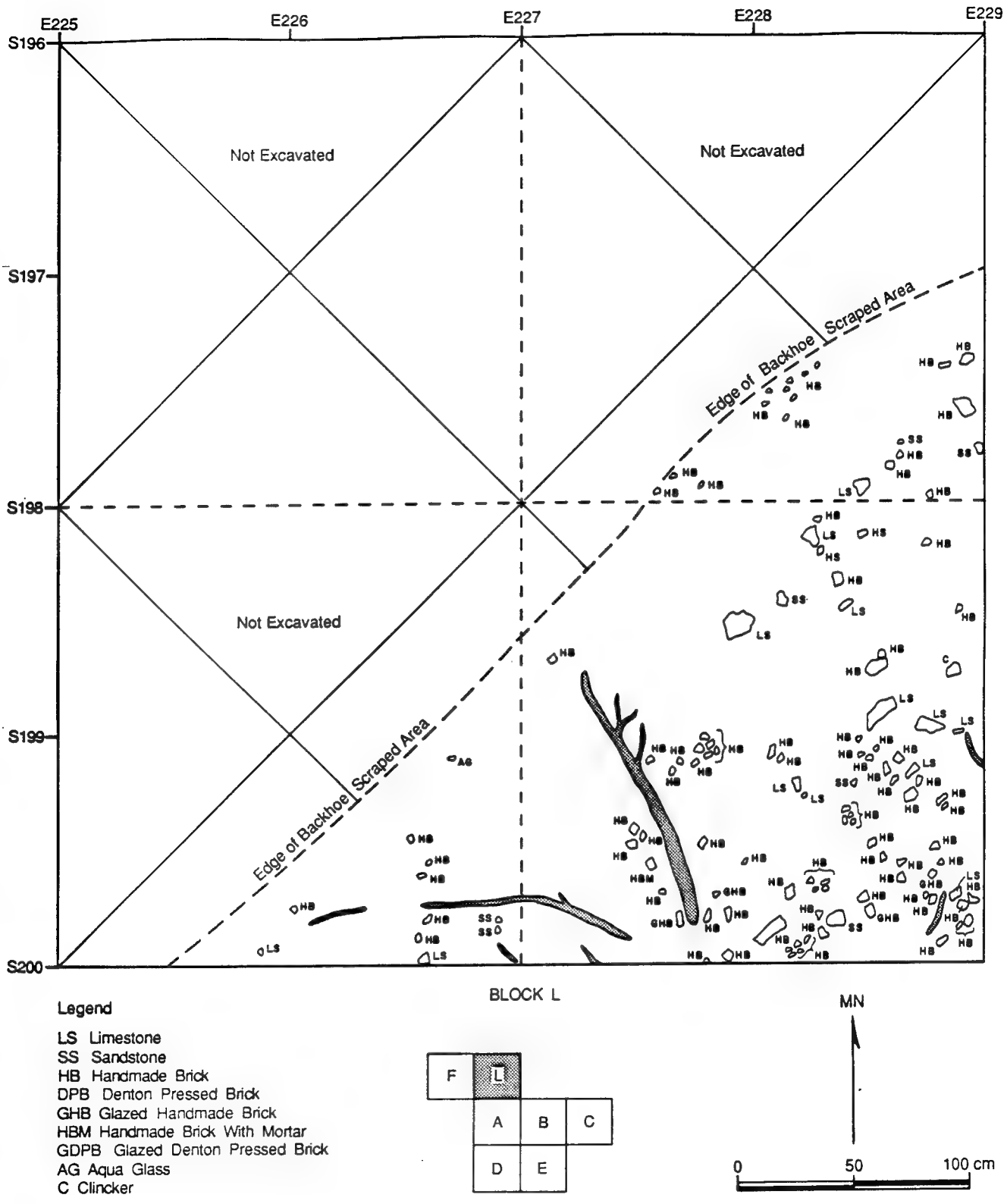
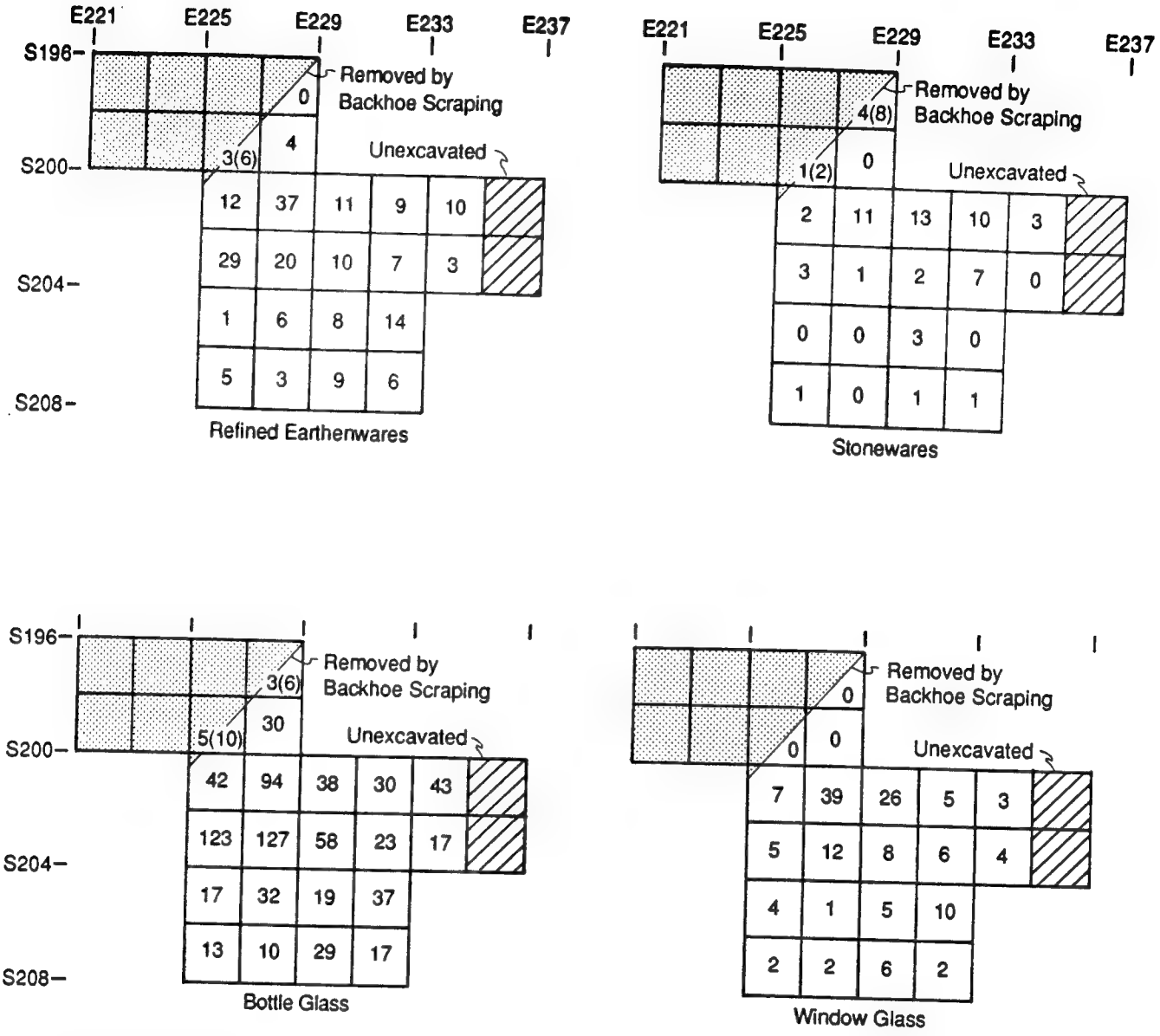
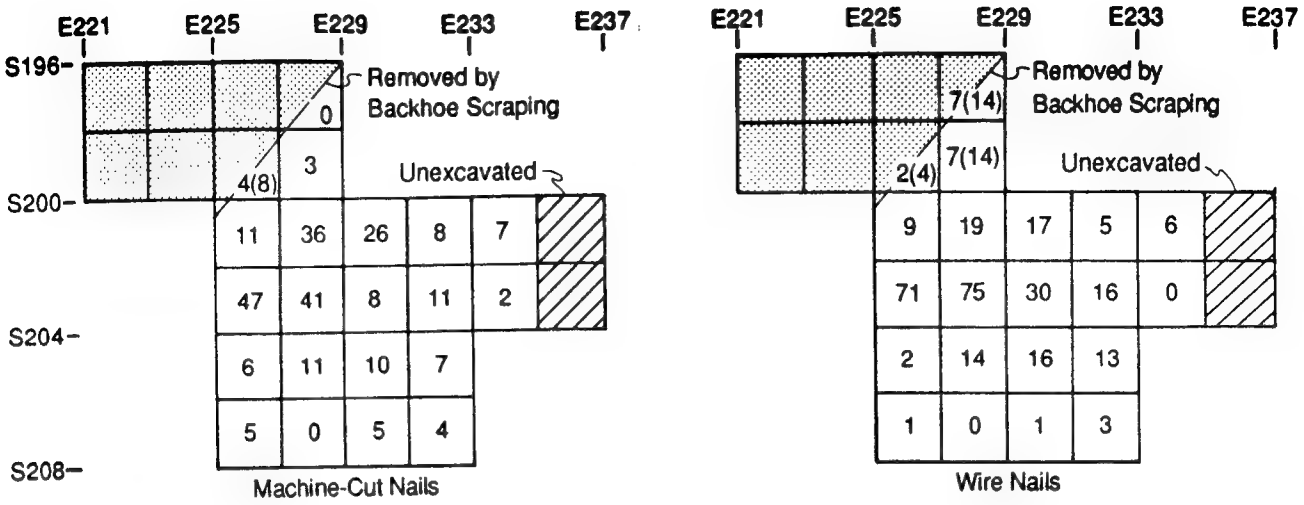



Figure 6.19 Map of Unit L in Block 1 at 41DN404.




Note: Artifact totals for partially removed units (Units F and L) are shown in brackets (e.g., 4(8)) and were determined by multiplying the actual number of artifacts found, 4, by a factor of 2 to estimate the expected total if the entire unit was excavated.

Figure 6.20 Distribution of refined earthenwares, stonewares, bottle glass, and window glass sherds in Block 1 at 41DN404.




Note: Artifact totals for partially removed units (Units F and L) are shown in brackets (e.g., 4(8)) and were determined by multiplying the actual number of artifacts found, 4, by a factor of 2 to estimate the expected total if the entire unit was excavated.

Figure 6.21 Distribution of machine-cut nails and wire nails in Block 1 at 41DN404.

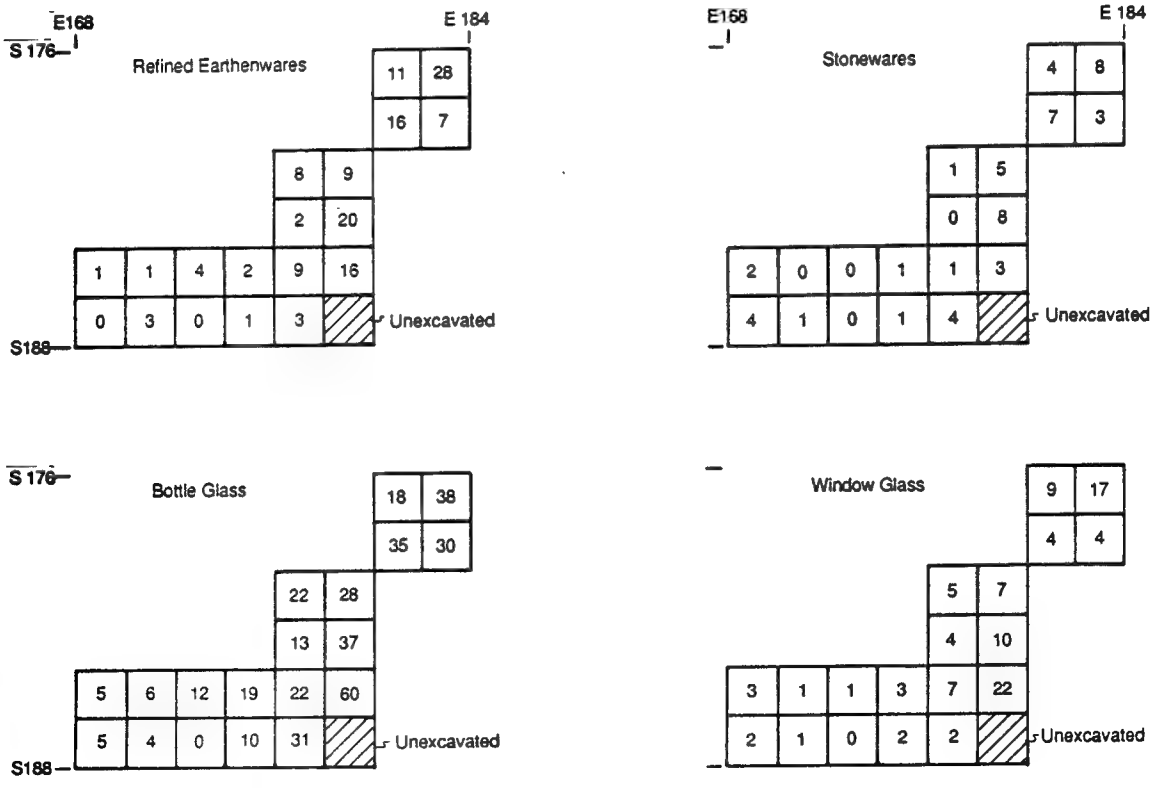



Figure 6.22 Distribution of refined earthenwares, stonewares, bottle glass, and window glass sherds in Block 2 at 41DN404.

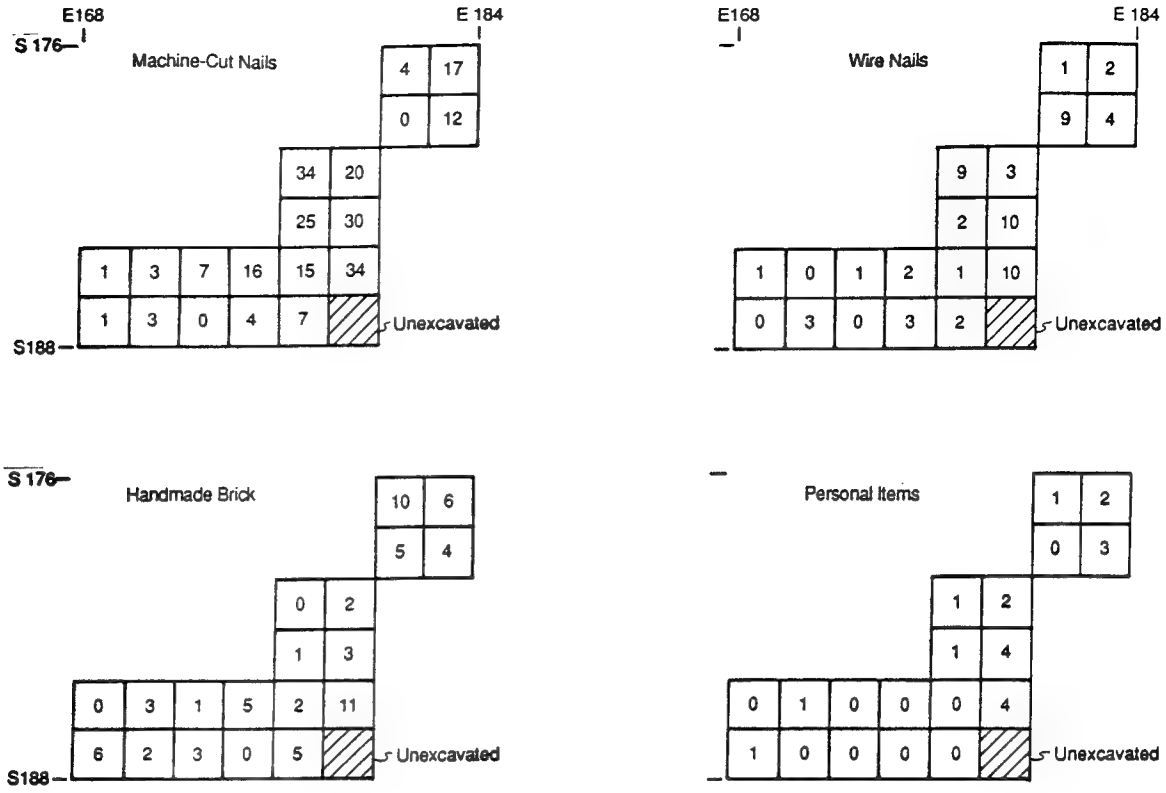



Figure 6.23 Distribution of machine-cut nails, wire nails, handmade brick, and personal items in Block 2 at 41DN404.

Table 6.7

Artifacts Recovered from Feature 1 during the Testing Phase at 41DN404[1]

| Category | Unit 2 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|
| Semi-coarse Earthenwares | | | | 1 | |
| Refined Earthenwares | 7 | 7 | 7 | 8 | 6 |
| Stonewares | 1 | 1 | 3 | 5 | 1 |
| Bottle Glass | 23 | 18 | 28 | 38 | 18 |
| Table Glass | | | | | 2 |
| Unid. Glass | | | | | 1 |
| Window Glass | 2 | 12 | 9 | 10 | 8 |
| Cut Nails | 25 | 9 | 22 | 37 | 17 |
| Wire Nails | | 1 | 1 | 3 | 2 |
| Handmade Brick | | 2 | 17 | 3 | 11 |
| Machine-made Brick | 10 | 2 | 4 | 7 | 7 |
| Building Material | 53 | 1 | 5 | 5 | 7 |
| Personal Items | | | 2 | 1 | 1 |
| Thin & Heavy Metal | 3 | 3 | 7 | 4 | 6 |
| Tin Cans | 3 | 2 | 17 | 4 | 8 |
| Machine & Wagon | | 3 | 3 | | 1 |
| Metal Hardware | 1 | | | | |
| Ammunition | 1 | | 1 | | |
| Horse & Stable | | | | | 1 |
| Electrical | | | | 1 | |

[1] Artifact categories that were sterile are not shown; no porcelain, lamp glass or household items were found.

Table 6.8

Artifacts Recovered from Feature 1 in Unit 50[1]

| Category | Level 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Refined Earthenwares | | | 2 | | 1 |
| Bottle Glass | 6 | 8 | 4 | 4 | 4 |
| Unid. Glass | 1 | 4 | 8 | 3 | |
| Window Glass | | | 1 | 1 | |
| Cut Nails | 2 | 1 | 2 | 5 | |
| Wire Nails | | | 5 | 2 | |
| Handmade Brick | | 1 | 5 | | 3 |
| Building Material | 46 | 61 | 79 | 14 | 9 |
| Household Items | 2 | | | | |
| Ammunition | | | 2 | | |

[1] Artifact categories that were sterile are not shown; no semi-coarse earthenwares, stonewares, porcelain, table or lamp glass, personal items, machine, wagon, or metal hardware, horse and stable, or electrical items; thin and heavy metal and tin can fragments were weighed and are not included here.

The faunal material from Feature 1 is inventoried in Appendix A. This material represents 13% of the faunal remains from the site and includes an assortment of species. Fish scales and eggshell fragments were the most frequent type of faunal material found in Feature 1. Several bones had cut marks, and both large and small mammals and birds were represented. This material was found primarily in Unit 13 and Unit 36, the west half of Feature 1. Little faunal material was found in the east half where, as noted above, there was less ash and more burned sediments.

Feature 1 is an outdoor cooking area and refuse dump. The amount of architectural debris in this feature suggests that a building, possibly a kitchen, was located in this area. No *in situ* structural remains were found. The contents of Feature 1 are similar to the remains found in Feature 2, discussed below.

Feature 2 is located in Unit F of the east block. It was uncovered during the mitigation phase as Unit 43. A planview of Feature 2 is shown in Figure 6.13 and a profile is provided in Figure 6.14. The feature is about 4 m northwest of the brick scatter in Block 1. It has been identified as a kitchen or kitchen-related trash deposit. It is unclear because of the lack of structural evidence, if a detached kitchen was located here.

The feature was excavated in 5 cm levels with the upper undisturbed level beginning 7cm below the surface. The eastern portion of the feature was exposed in Backhoe Scraped Area 1 (see Figure 6.10). Also, some mounding occurred in this area. Because the feature boundaries were found to be largely diffuse and because of the depth of the feature, the excavation technique was changed from excavating the entire feature to excavating a single hand-excavated trench bisecting the feature north-south. The north-south dimensions of the feature are defined, but the east-west dimensions are indefinite. The feature is circular to elliptical and was identified by diffuse burned clay and ash exposed on the ground surface. Feature 2 contains architectural remains, but these may be related to the dwelling. Other artifacts in Feature 2 are ceramics, glass sherds, personal items, and miscellaneous farm items. These materials are summarized in Table 6.9.

Table 6.9

Artifacts Recovered from Feature 2 in Unit 43[1]

| Category | Level 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| Refined Earthenwares | 4 | 7 | 10 | 4 | | 4 | 4 | 1 | |
| Stonewares | 3 | 2 | | 1 | | | | 1 | |
| Porcelain | | | 1 | 1 | | | | | |
| Bottle Glass | 3 | 65 | 100 | 38 | 22 | 31 | 16 | 20 | 33 |
| Lamp Glass | | 7 | 14 | | | 1 | | | |
| Unid. Glass | | 8 | 8 | | 3 | 3 | 4 | | |
| Window Glass | | 3 | 5 | | 1 | 2 | 5 | | |
| Machine-cut Nails | 5 | 53 | 86 | 79 | 47 | 22 | 10 | 29 | 5 |
| Wire Nails | 2 | 66 | 180 | 59 | 31 | 11 | 14 | 12 | 5 |
| Handmade Brick | | | 27 | 17 | 36 | 57 | 107 | 88 | 39 |
| Personal Items | 2 | 3 | 4 | 6 | 2 | 2 | 23 | 46 | 32 |
| Tin Cans | | | | | | | | | 2 |
| Household Items | | 2 | 2 | | | | | | |
| Machine & Wagon | | | | 2 | | | | | |
| Tools | 1 | | | 1 | | | 1 | | |
| Ammunition | | | 1 | 1 | | | | | |
| Horse & Stable | | 1 | | | | | | | |

[1] Artifact categories that were sterile are not shown; no semi-coarse earthenwares, table glass, machine-made brick, building material, thin and heavy metal, metal hardware, or electrical items.

Architectural items account for 37.68% of the assemblage from Feature 2. The upper two levels contained primarily ash, while burned matrix and rocks were uncovered in Level 3. The matrix from Levels 1 and 2 were fine screened in the field, while the remaining levels were water screened through fine-screen mesh in the laboratory.

Turbation of Feature 2 included large roots and an ant hill. The ash petered out in Level 6 (32-37cm below surface), while calcium carbonate increased in frequency within the feature. The distribution of artifacts within the feature was uneven, with a concentration occuring in the south half in Levels 6-8.

Faunal material was extremely abundant in Feature 2 (see below). This material is summarized in Appendix A and includes an assortment of fish, and large and small mammal species.

In summary, Feature 2 was identified as a cooking area or cooking-related trash dump. It is similar in size to Feature 1, but it is much deeper and contains a greater variety of remains. Both contain domestic debris, including ceramic and glass sherds and architectural remains, but Feature 2 contains numerous personal items and some farm items. In addition, a dwelling has been clearly identified about 4 m southeast of Feature 2. A second dwelling may be associated with Feature 1, but it was not found. This suggests that Feature 1 may have been associated with an earlier, possibly temporary dwelling, which was abandoned when the house in the southeast area was built. If a dwelling did not occur in the northwest, then Feature 1 may have been associated with a smokehouse related to the southeast dwelling. Its location 25-30m from this dwelling suggests it was not a detached kitchen or outdoor cooking area associated with the southeast dwelling.

The number of personal items and farm items in Feature 2 suggests that some dumping activity or yard-cleaning activity may be represented in this feature. These items are summarized below:

Table 6.10

Personal and Farm Items Recovered from Feature 2

| Personal Items | | Household and Farm Items | |
|---|---|---|---|
| 2 | Iron button | 1 | Iron axe head |
| 2 | Clothing eyelet | 1 | Pocket knife frag. |
| 2 | Stoneware pipe frag. | 1 | Implement tip |
| 1 | Snap | 1 | Wagon clamp |
| 2 | Toy gun parts | 1 | Wagon whiffletree strap |
| 1 | Pencil ferrule | | |
| 1 | Suspender part | 1 | Harness ring |
| 2 | Shell buttons | 3 | Straight pins |
| 2 | Safety pin parts | 3 | Clock gear frags. |
| 1 | Clothing rivet | 3 | Lead shot |
| 2 | Shoe eyelet | 1 | .32 caliber rimfire cartridge |
| 68 | Shoe nails | | |
| 13 | Shoe heel frags. | | |
| 1 | Slate frag. | | |
| 3 | Ceramic doll parts | | |

Dating: Mean beginning dates were calculated for the site using all diagnostic, datable refined earthenware, stoneware, and bottle glass sherds recovered during the testing and mitigation phases, excluding Features 1 and 2. These dates are shown below:

| | | |
|---|---|---|
| Refined earthenwares | 1863.5 | (n=462) |
| Stonewares | 1871.6 | (n=110) |
| Bottle glass | 1885.3 | (n=122) |
| Combined | 1868.6 | (n=694) |

A twenty-year span occurs between the date obtained for the refined earthenwares and the bottle glass sherds. Two factors account for this pattern and include the amount of modern bottle glass sherds and the difficulty in identifying datable attributes on small nineteenth century glass sherds. A comparison of the mean beginning dates obtained for the site during the testing and mitigation phases (Table 6.11) indicate the disparity in the bottle glass data. The mitigation results reflect a higher recovery of twentieth century bottle glass, including more modern sherds. Few artifacts were collected from the surface during testing, while Block 2 contained a high percentage of surface artifacts. In fact, the placement of Block 2 was determined by the presence of a surface scatter west of Feature 1.

Table 6.11

Comparison of the MBD Obtained During the Testing and Mitigation Phases at 41DN404

| Category | Testing | Mitigation |
|---|---|---|
| Refined Earthenwares | 1863.8 | 1863.4 |
| Stonewares | 1868.8 | 1872.5 |
| Bottle Glass | 1864.1 | 1893.2 |

The combined MBD of 1869 for 41DN404 correlates well with the archival and architectural data. The site was acquired for a homestead by J. H. Perry and his wife in 1870, who occupied the site until 1890. The farmstead changed ownership a number of times, and was occupied by the Sparks family in the early 1900s. It appeared on the 1918 map, but not on later maps. The architectural data indicates the dwelling was constructed in the 1870s or 1880s and was modified during the early twentieth century.

Faunal Remains: This site differs from the others in the relative abundance of fish and small animal remains and the lack of cut-marked bones of large mammals. Even discounting eggshells and the over-abundance of fish scales (Appendix A), fish elements represent 59% of the identified taxa (Table 6.12) and small animals 42% (based on an adjusted total ID of 84). Pig remains were found, but in low quantities, and the large-mammal category is relatively small, indicating that few bones of pig or cattle size were recovered. Only two of the latter show evidence of butchering, precluding determination of type of meat cut.

This site is one of only two containing evidence of horse. Even though horses were seemingly indispensable to most early settlers, their remains are not abundant in northcentral Texas farmstead sites (e.g., Jurney 1988:325; Yates 1982:287). Whether this paucity is an indication that horses were not available, or indeed not essential, to farmsteading remains unclear. The apparent disparity between the written record and recollections of the necessity and utility of horses and the recovery of horse bones from archaeological sites is a research question requiring additional evidence and investigation.

Table 6.12

Identified Vertebrates and Bone Counts from 41DN404

| Taxon | NISP | MNI |
|---|---|---|
| Gar (*Lepisosteus* sp.) (incl. 5 scales) | 6 | 1 |
| Catfish (Ictaluridae) | 2 | 1 |
| Smallmouth buffalo (*Ictiobus bubalus*) | 1 | 1 |
| Crappie (cf. *Pomoxis annularis*) | 2 | 1 |
| Bass/Sunfish (Centrarchidae) | 4 | 2 |
| Fish, indeterminate (incl. 138 scales) | 177 | - |
| Softshell turtle (*Trionyx* sp.) | 1 | 1 |
| Musk/Mud turtle (Kinosternidae) | 1 | 1 |
| Slider (cf. *Trachemys* sp.) | 1 | 1 |
| Snake, indeterminate | 2 | 1 |
| Chicken (*Gallus gallus*) | 2 | 1 |
| Bird, medium (incl. 143 eggshells) | 150 | 2 |
| Bird, small | 2 | - |
| Opossum (*Didelphis virginianus*) | 1 | 1 |
| Cottontail (*Sylvilagus floridanus*) | 9 | 1 |
| Cottonrat (*Sigmodon hispidus*) | 4 | 2 |
| Rodent, indeterminate | 8 | - |
| Raccoon (*Procyon lotor*) | 1 | 1 |
| Pig (*Sus scrofa*) | 8 | 1 |
| Horse (*Equus caballus*) | 1 | 1 |
| Mammal,large | 9 | - |
| Mammal, medium | 3 | - |
| Mammal, small | 9 | - |

Total Bone = 1601,
ID = 404 (25%) (12 Burned)
(fine = 150, coarse = 46, flot. = 208)
unid = 1197 (345 Burned)
(fine = 1054, coarse = 45, flot. = 98)

The other species represent native fauna from the river, its tributaries and along their banks. Opossum and raccon are still hunted in these habitats. Cottontails are abundant along the edges of the forested areas in the bottomlands, as well as the uplands. The use of these native animals by the inhabitants is only speculative and is surmised based on the association of their remains with the cultural materials. The diversity of native faunas is also remarkable at this site, but the absence of other natives, particularly deer and turkey, argues against the supposition that hunting and fishing activities were important to the subsistence of the occupants.

Distribution of bone across the site shows a marked concentration in Feature 2 (Unit F), where 75.7% of the total faunal material was recovered. Because of the small nature of the remains, this abundance was not evident when the planview of Feature 2 was prepared. Burned bone was highest here as well, suggesting a periodically burned kitchen-related refuse dump or kitchen area. Other concentrations occurred in Block 2 and Feature 1 (kitchen-related refuse dump) south of BHT 2.

**Mitigation Summary**: Site 41DN404 is a farmstead initially occupied about 1870 and abandoned in the 1920s or early 1930s. The dwelling was a small structure, probably log, with a handmade brick chimney. Based on the wire nails and machine-made brick, an addition was probably built onto the house during the early 1900s. No twentieth-century structures were found at the site. No well or windmill was

found. While a small number of sites at Lewisville Lake and Ray Roberts Lake did not have wells or windmills, this was uncommon. In addition, no cellar was found. Cellars were common at Ray Roberts Lake, at sites occupied after 1900 in the Lewisville Lake area, and at many farms at Joe Pool Lake. Several factors may account for the absence of a cellar. Based on data from the surrounding reservoirs (Jurney, Lebo, and Green 1988; Jurney and Moir 1988; and Moir and Jurney 1988), cellars appear to be more common, albeit not restricted to farmsteads occupied by settlers from the Midwest. It is unclear if this pattern correlates with when a site was originally occupied. Other recorded early sites at Lewisville Lake (e.g., 41DN289, 41DN410) do not have cellars, nor do they have wells or cisterns. However, the absence of wells may reflect a proximity to springs or creeks, or may indicate that the well is now underwater.

Two subsurface features were found during excavations at the site. Feature 1, in the northwest site area, and Feature 2, in the southeast, are both kitchen-related deposits. Feature 1 may be a second, possibly earlier, kitchen deposit or a smokehouse-related deposit. No other outbuildings or support structures were found.

The sheet-refuse deposit is low to moderate density and clusters in two areas, with a broad, almost sterile region in between. The sheet refuse in both the northwest and southeast areas are similar in content, age, and relative frequency. Significant differences occur in the frequency of brick and mortar fragments among these areas, with a concentration occuring in the southeast house area. In summary, 41DN404 was occupied from ca. 1870 to the 1920s or early 1930s. Extant features include architectural remains, particularly a brick scatter, from the house in the southeast site area. Two kitchen-related features were found.

### 41DN429

| | |
|---|---|
| Map Quad | Lewisville East 7.5', #3396-222 |
| Elevation above MSL | 515-522' |
| Vegetation | Locust, Willow, Oak, Grasses |
| Cultural Affiliation | Historic (ca. 1870s to 1950s) |

**Description**: The site is on the northeastern shore of Westlake Park and approximately 1,200 m southeast of the old Lake Dallas Dam. Based on the mitigation data, the current site area is approximately 50 m by 40 m. Features include a house mound and chimney fall, a capped well, cellar, and a two-track road that bisects the eastern site area (Figure 6.24). The deposits east of the road are disturbed. Intact deposits in the main site area extended up to 40 cm below the surface.

**Archival Investigations**: The site is located on the William B. Weldon survey A-1351, which was granted to Weldon in 1850 (Figure 6.25). The survey was conveyed to G. W. McCurley in 1855 and remained in the McCurley family until 1933. The site is located on Tract 4. The chain of title for this property is given in Table 6.13. The site is shown on the 1918, 1925, 1936, and 1946 maps.

According to Belcher (1984), the first dwelling was probably a single-room log dwelling set on piers and located near the northcentral part of the survey. The building faced south with a stone chimney on the west end, a door on the south elevation, and a window west of the door.

> It had a door on the north, which led to another log structure that served as the kitchen at one time. Later, it became a crib for corn or other feed for the livestock, and a shed-like room was attached to the house and served as the kitchen...A water well was dug about 100 ft. east of this cabin and may have been the source of the dreaded Typhoid fever which plagued the family two different times (Belcher 1984).

Later, an addition was built onto the east side of the dwelling. The addition was similar in size and floorplan with the original room. However, no chimney was built on the new east elevation and the addition was plank rather than log (Belcher 1984).

George W. McCurley died in 1857, and his 320 acres of the W. B. Weldon survey and his 320 acres of the J. S. Weldon survey was divided between his six children as shown in Table 6.14. Each received equal shares from both surveys, totalling 106.75 acres apiece. Site 41DN429 was located on Tract 3 of the W. B. Weldon survey, which was acquired by George C. McCurley (Figure 6.25). Site 41DN430 is also located on this tract. The division of the J. S. Weldon survey is shown in Table 6.13. Site 41DN423 is located on Tract 1 and 41DN424 is on Tract 2. No remains of the early farmsteads on these tracts were found.

Table 6.13

Division of George W. McCurley Estate[1]

| Grantee | W. B. Weldon | J. S. Weldon |
|---|---|---|
| Francis B. McCurley | Tract 1 | Tract 1 |
| Nancy McCurley | Tract 2 | Tract 6 |
| Margaret A. Perry | Tract 3 | Tract 4 |
| George C. McCurley | Tract 4 | Tract 3 |
| Harriet R. Hyatt | Tract 5 | Tract 2 |
| Abraham McCurley | Tract 6 | Tract 5 |

[1] Compiled from Deed Records Vol. 75, p. 26 and Vol. 40, p.525.

Table 6.14

Tax Values for Site 41DN429 Between 1880 and 1889

| Year | Acres | Value |
|---|---|---|
| 1880 | 133 | 400 |
| 1881 | 133.3 | 660 |
| 1885 | 133.3 | 600 |
| 1886 | 133.3 | 665 |
| 1887 | 133.3 | 695 |
| 1888 | 133.3 | 700 |
| 1889 | 133.3 | 700 |

George C. McCurley enlisted in the Confederate Army in 1862 and in February, 1866, about one year after returning from the war, he married and settled in the house his father had built, and which he had inherited (Belcher 1984). During the 1870s, George built a larger dwelling for his growing family. Tax values for this property during the years 1880, 1881, and 1885 through 1889 are shown in Table 6.14, and

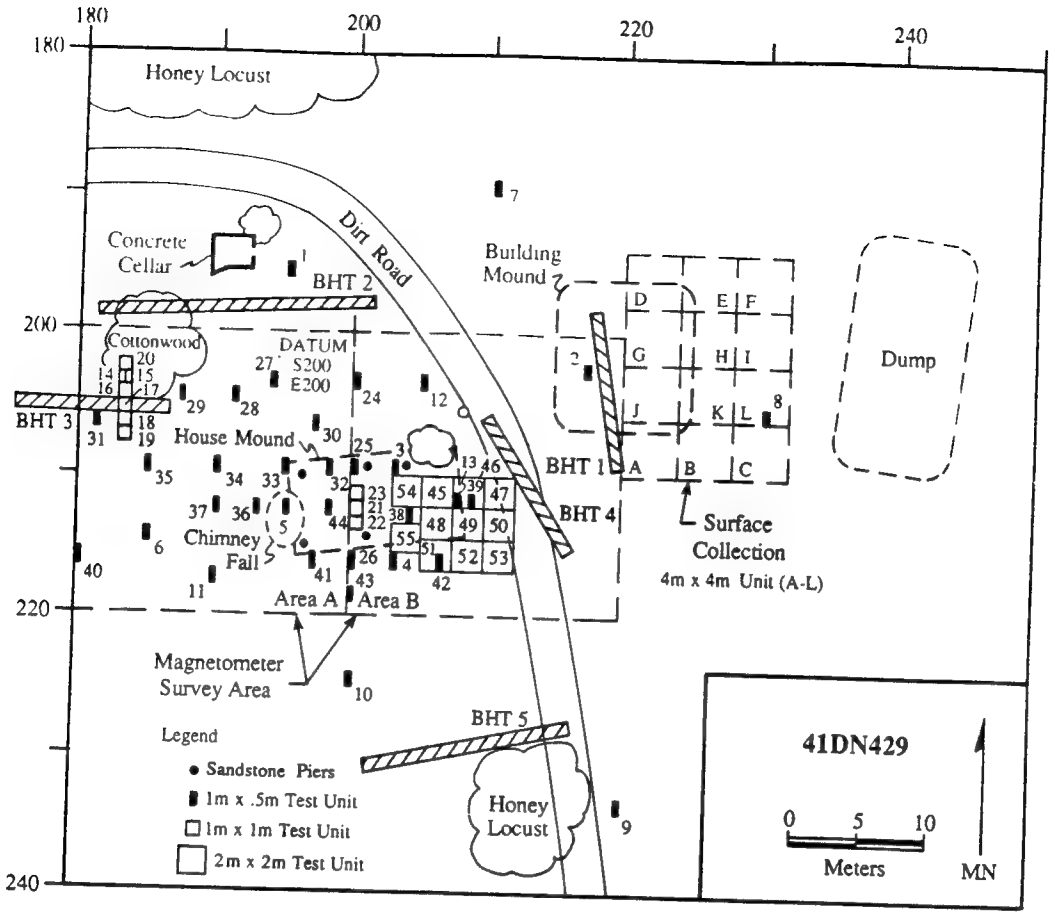



Figure 6.24 Site map for 41DN429.

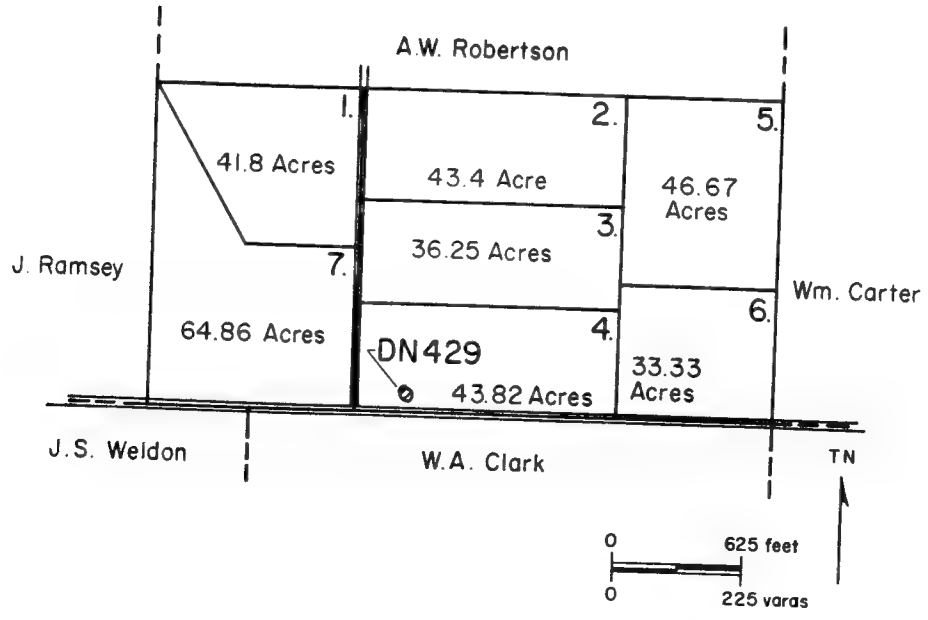



Figure 6.25 Location of site 41DN429 on Tract 4 of the W. B. Weldon survey, A-1351.

Table 6.15

Land Tract History for Site 41DN429

William B. Weldon survey A-1351

| Date | Grantor | Grantee | PriceLand Description | Reference |
|---|---|---|---|---|
| 1850 | State of Texas | W. B. Weldon | 320 ac survey | E/20 |
| 1855 | J. H. Wilcox and Susan E. (surveyor) | G. W. McCurley | $450.320 ac; entire survey | L/403 |
| 1862 | Partitioning of land among heirs of G. W. McCurley | M. A. Perry (nee McCurley) | 53.33 ac; Tract 3 of original subdivision; part of Tract 4 in new subdivision | 75/26 |
| 1871 | S. Perry and wife, Margaret (Illinois) | G. C. McCurley | $200.640 ac, including 320 ac of indenture W. B. Weldon survey and 320 ac of J. S. Weldon survey | M/339 |
| 1900 | A. J. McCurley | R. L. and W. L. McCurley | $260.134 ac, including central portion of survey containing current Tracts 2, 3, and 4 | 80245 |
| 1933 | W. L., R. L, A. J. McCurley and E. and J. A. Mansfield (heirs) | A. H. Thurmond and wife Roxana | $10.43.82 ac/Tract 4 in new subdivision (quit claim deed) | 245/131 |
| 1951 | A. H. Thurmond and wife Roxana | USA | $5230. 43.9 ac; Tract 4 in new subdivision | 368/550 |

indicate that the property slowly increased in value during this period.

**Previous Investigations**: The site was recorded during the 1986-87 survey. Sixteen shovel test pits were dug, and a sample of diagnostic surface artifacts were collected. Shovel Test Pits 5, 10, and 12 contained artifacts. The other shovel test pits were sterile.

At the beginning of the testing phase, a proton magnetometer survey was conducted in the main house area to identify archaeologically significant anomalies (see Brown and Lebo 1990). Two contiguous 20x20-m blocks were surveyed in an effort to uncover evidence of subsurface features and to further define the sheet-refuse deposit.

The survey was conducted by personnel from the Department of Geology, University of Texas at Arlington, under the direction of Dr. Brooks Ellwood. The results, shown in Figure 6.26 indicate several subsurface features, including a shallow A-horizon in the northeastern part of the northern block. A thicker A-horizon occurs west of this large anomaly and correlates with a small linear ridge extending north-south through the western site area. A dipolar anomaly occurs in he far northwestern corner and testing revealed a dense sheet-refuse deposit. This occurs on the crest of the low ridge, and the material is primarily twentieth century in age.

A large dipolar anomaly occurs off the northeast corner of the house mound in an area that includes a capped well and windmill. The magnetometer signature obtained for this area is the same as the signature identified for collapsed cellars at Ray Roberts Lake (see Lebo 1991). Several low negative anomalies and several high positive anomalies occur within the fireplace and heavy chimney fall distribution, both on the western portion of the house mound and directly off the southwest corner. A high negative anomaly was also identified southeast of the house mound.

In addition to the magnetometer survey, fourteen 1x.5-m units, nine 1x1-m test units, and two backhoe trenches were excavated (see Brown and Lebo 1990 and Figure 6.24). The 1x.5-m units were judgmentally placed to maximize site coverage and test specific anomalies, with the exception of Units 3, 4, 5 and 13. These four units were located within the house area to identify wall lines. Backhoe Trench 1 was excavated through a possible structure mound, while Trench 2 was placed north of the magnetometer block to recover information about the stratigraphy and cultural deposits

outside the magnetometer surveyed area. The nine 1x1-m units were excavated as two hand-dug trenches to provide additional information about the former structure and the dense sheet refuse deposit first identified in Unit 14. A systematic surface collection was also made in this area (see Figure 6.24).

The units placed within the house mound contained both sheet refuse and architectural deposits (see Brown and Lebo 1990) The A-horizon was shallow in the units located along the edge of the house mound or directly outside the mound. The B-horizon was more deeply buried in units excavated under the house as a result of the construction of a house mound.

The features and artifact assemblage indicate this farmstead was occupied from the late nineteenth century to the 1940s. Several features were found, including the house mound and piers. A second mound, northeast of the dwelling, was surface collected, and contains mixed sheet-refuse deposits. An outbuilding may have been located here. The dense trash deposit contains a mixed assemblage comprised of sheet refuse spanning site occupation and trash from near the end of occupation.

This site exhibits good integrity and is one of only three well-preserved farmsteads in the reservoir. It meets the criteria of eligibilty for nomination to the National Register and is an important site for addressing major research questions.

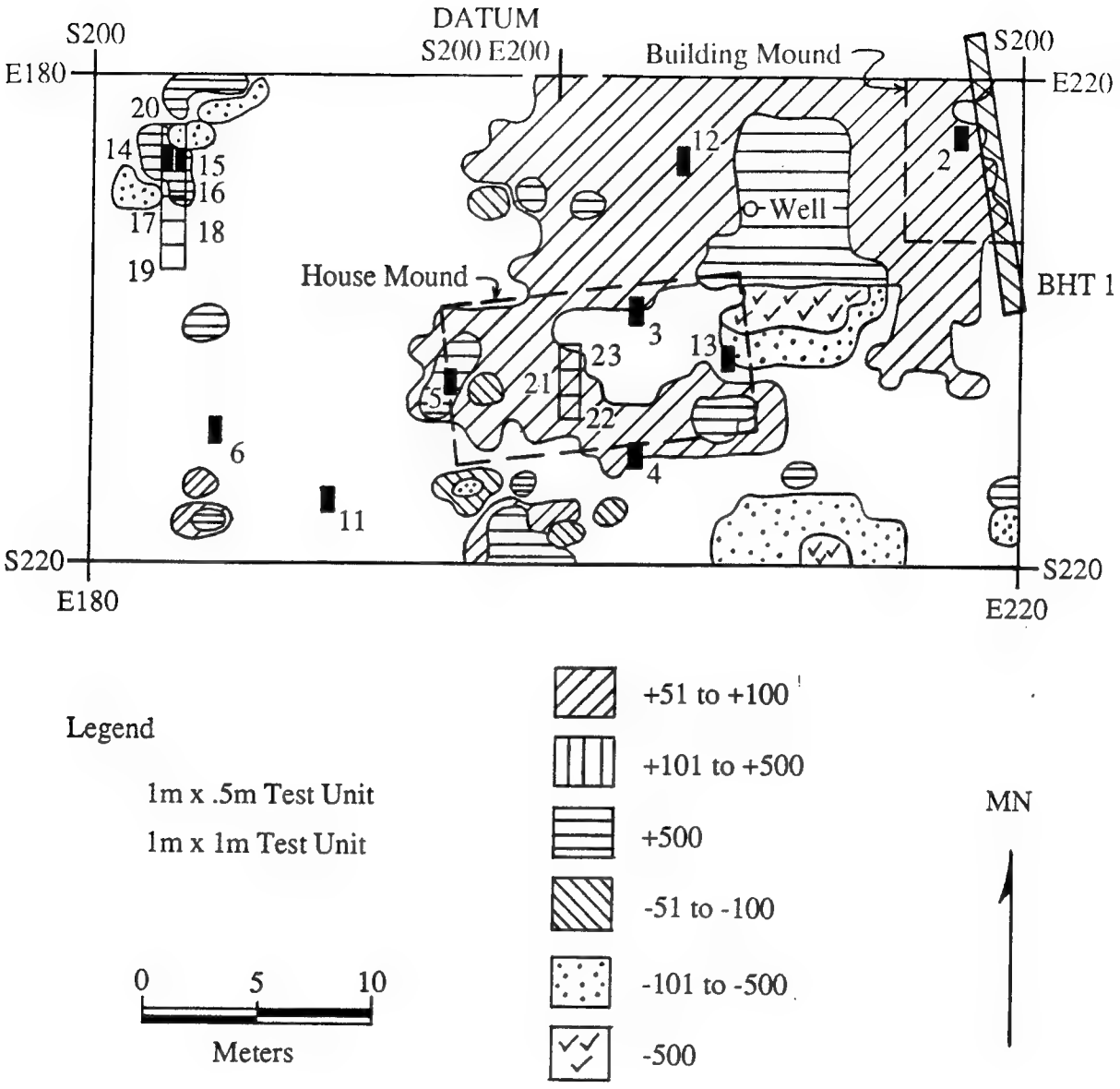



Figure 6.26 Map showing the magnetometer survey results for 41DN429.

**Mitigation Methods**: Mitigation included excavation of 21 1x.5-m units, 10 2x2-m units, and 3 backhoe trenches (BHT 3-5). The 1x.-5m units were dug to recover additional sheet-refuse data in the active yard and under the dwelling (Figure 6.24). The 2x2-m units were excavated as Block 1, located between the dirt road (east) and the center of the dwelling (west). One unit in the block, Unit 49, was not excavated because it contained a large fire ant mound. The backhoe trenches were dug to recover information from several features. BHT 3 was placed to bisect the high-density sheet-refuse deposit identified northwest of the house mound during testing (Figure 6.27). BHT 4 was oriented northwest-southeast, bisecting the dirt road east of the house mound, while BHT 5 was placed south of the dwelling to examine the subsurface deposits (Figure 6.24). Excluding the road, no features were identified in these trenches.

**Mitigation Results**: The artifact assemblage obtained during testing is combined here with the mitigation data, which is summarized by unit type in Table 6.16. These data indicate that 63.79% of the artifacts recovered from the site were architectural remains with building material accounting for 39.38% of the recovered artifacts. Tin can fragments accounted for an additional 10.61%, with all other artifacts only accounting for 25.60%. The brick assemblage contained primarily handmade bricks (90.06%), while wire nails totalled 76.70% of the nails from the site.

Table 6.16

Artifact Assemblage from 41DN429

| Category | N | % |
|---|---|---|
| Semi-coarse Earthenwares | 4 | <0.01 |
| Refined Earthenwares | 668 | 2.71 |
| Stonewares | 245 | 1.00 |
| Porcelain | 43 | 0.17 |
| Bottle Glass | 3164 | 12.86 |
| Table Glass | 250 | 1.02 |
| Lamp Glass | 228 | 0.93 |
| Unid. Glass | 129 | 0.52 |
| Window Glass | 3000 | 12.19 |
| Machine-cut Nails | 632 | 2.57 |
| Wire Nails | 2080 | 8.45 |
| Handmade Brick | 580 | 2.36 |
| Machine-made Brick | 64 | 0.26 |
| Building Material | 9690 | 39.38 |
| Personal Items | 357 | 1.45 |
| Thin & Heavy Metal | 871 | 3.54 |
| Tin Cans | 2196 | 8.92 |
| Household Items | 135 | 0.55 |
| Machine & Wagon | 54 | 0.22 |
| Metal Hardware | 63 | 0.26 |
| Tools | 33 | 0.13 |
| Horse & Stable | 30 | 0.12 |
| Electrical Items | 61 | 0.25 |
| Total | 24609 | 99.99 |

Table 6.17 shows a comparison of the artifact frequencies and percentages from the high-density deposit in the northwestern site area and the artifacts from the remainder of the site. The units excavated in the high-density deposit are Units 14-20 and Unit 31 (see Figure 6.24). Units included in the calculations for the deposits outside include all other units (Units 1-13, 21-30, and 32-53).

Table 6.17

Comparison of the Artifact Assemblages from the High-Density Deposit in the Northwest Site Area and the Remaining Site

| Category | NW | | Remaining Site | |
|---|---|---|---|---|
| | N | % | N | % |
| Semi-coarse Earthen. | 3 | 0.05 | 2 | 0.01 |
| Refined Earthenwares | 427 | 7.38 | 240 | 1.24 |
| Stonewares | 135 | 2.33 | 111 | 0.57 |
| Porcelain | 16 | 0.28 | 37 | 0.19 |
| Bottle Glass | 1218 | 21.06 | 1896 | 9.79 |
| Table Glass | 188 | 3.25 | 62 | 0.93 |
| Lamp Glass | 38 | 0.66 | 190 | 0.98 |
| Unid. Glass | 119 | 2.06 | 8 | 0.04 |
| Window Glass | 285 | 4.93 | 2713 | 14.02 |
| Machine-cut Nails | 200 | 3.46 | 435 | 2.25 |
| Wire Nails | 582 | 10.06 | 1498 | 7.74 |
| Handmade Brick | 65 | 1.12 | 508 | 2.62 |
| Machine-made Brick | 61 | 1.05 | 49 | 0.25 |
| Building Material | 248 | 4.29 | 9394 | 48.53 |
| Personal Items | 129 | 2.23 | 222 | 1.15 |
| Thin & Heavy Metal | 358 | 6.19 | 610 | 3.15 |
| Tin Cans | 1550 | 26.79 | 1118 | 5.78 |
| Household Items | 71 | 1.23 | 72 | 0.37 |
| Machine & Wagon | 20 | 0.35 | 38 | 0.20 |
| Metal Hardware | 34 | 0.59 | 29 | 0.15 |
| Tools | 12 | 0.21 | 21 | 0.11 |
| Ammunition | 9 | 0.16 | 30 | 0.15 |
| Horse & Stable | 6 | 0.10 | 23 | 0.12 |
| Electrical | 10 | 0.17 | 51 | 0.26 |
| Total | 5784 | 100.00 | 19357 | 99.99 |

These data indicate that architectural remains dominate in the main area, which includes a house mound and chimney fall. Architectural remains represent 75.41% of the artifacts from this area compared with only 24.91% from the northwest site area. Tin can fragments are more common in the northwest area than the remaining site area. When architectural remains and tin can fragments are removed from the counts, the artifact assemblages from these two areas appear similar (Table 6.18). In the northwest area ceramics represent 20.81% of the assemblage, glass totals 55.96%, while the remaining categories (including personal, household, and farm-related artifacts) represent 23.24% of the artifacts. In the remaining site area ceramics are less frequent (10.71%), while glass (59.21%) and other categories (59.21%) are slightly more common than in the northwest.

These data, along with the absence of a depression or culturally-dug depression indicate that the high-density area in the northwest is not a dump. The material is contemporaneous with the artifacts elsewhere on the site and are similar in type and relative frequency.

Artifact Distributions: Using the data from the 1x.5-m units and the 1x1-m units, density maps were produced for each major artifact category. The values shown on these maps were calculated per 1x.5-m unit. Data from the 1x1-m units

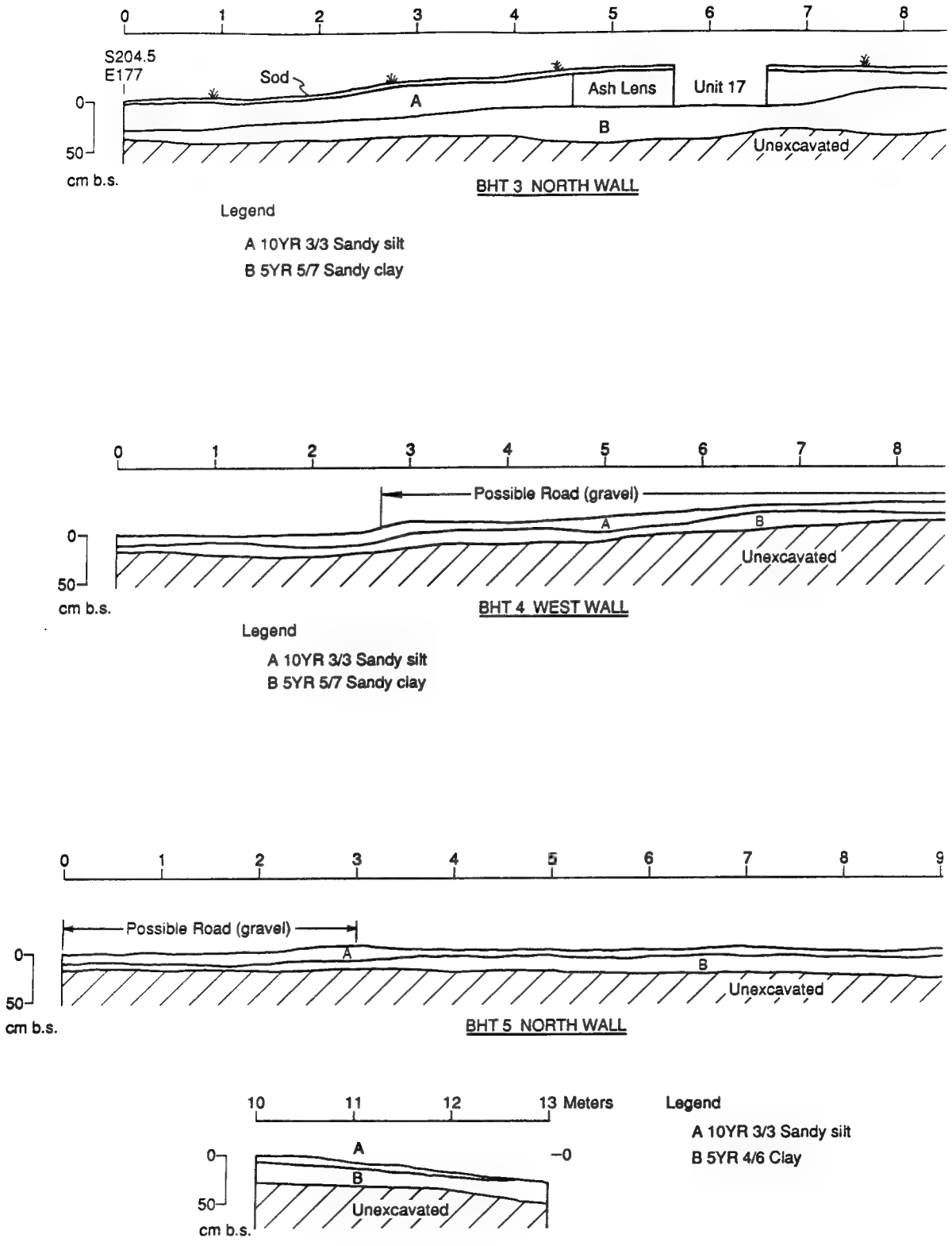



Figure 6.27 Profiles for backhoe trenches 3 and 4 at 41DN429.

Table 6.18

Comparison of the Artifact Assemblages from the High-Density Deposit in the Northwest Site Area and the Remaining Site, Excluding Architectural Items and Tin Can Fragments

| Category | NW | | Remaining | |
|---|---|---|---|---|
| Site | N | % | N | % |
| Semi-coarse Earthen. | 3 | 0.11 | 2 | 0.05 |
| Refined Earthenwares | 427 | 15.29 | 240 | 6.59 |
| Stonewares | 135 | 4.83 | 111 | 3.05 |
| Porcelain | 16 | 0.58 | 37 | 1.02 |
| Bottle Glass | 1218 | 43.61 | 1896 | 52.06 |
| Table Glass | 188 | 6.73 | 62 | 1.71 |
| Lamp Glass | 38 | 1.36 | 190 | 5.22 |
| Unid. Glass | 119 | 4.26 | 8 | 0.22 |
| Personal Items | 129 | 4.62 | 222 | 6.10 |
| Thin & Heavy Metal | 358 | 12.82 | 610 | 16.75 |
| Household Items | 71 | 2.54 | 72 | 1.98 |
| Machine & Wagon | 20 | 0.72 | 38 | 1.04 |
| Metal Hardware | 34 | 1.22 | 29 | 0.80 |
| Tools | 12 | 0.43 | 21 | 0.58 |
| Ammunition | 9 | 0.32 | 30 | 0.82 |
| Horse & Stable | 6 | 0.21 | 23 | 0.63 |
| Electrical | 10 | 0.36 | 51 | 1.40 |
| Total | 2793 | 100.01 | 3642 | 100.02 |

were divided in half and included in the construction of these maps. Separate density maps were produced for Block 1.

An overview of the assemblage recovered from the systematic surface collection during testing is presented in Table 6.19. These data indicate that many artifact categories have broader distributions at the site than is indicated by the 1x.-5m unit data.

1x1-m and1x.5-m Units: The distributions of refined earthenwares, stonewares, bottle glass, and window glass sherds from the 1x1-m and1x.5-m units are shown in Figures 9.28 and 9.29. These data indicate a moderate to high-density sheet-refuse deposit.

Refined earthenwares exhibit a broad distribution within the main site area. Sherd counts ranged from 0 to 51 per 1x.5-m unit. Unit 19 contained 103 sherds (1x1-m unit). None were found in 1x.5-m units excavated north or east of the dirt road, but sherds did occur in the surface collection. The highest concentration occurred in the northwest site area. One unit under the house (Unit 44) contained 16 sherds.

Stoneware sherds exhibited a more restricted distribution than refined earthenwares. They cluster in the northwest, occur in the active yard west of the house, and a small number occur under the dwelling. In general, they occur further from the house in the active yard than refined earthenwares or bottle glass (discussed below). None were found in excavated units north or east of the dwelling, but a small number did occur in the surface collection.

Bottle glass sherds had the broadest distribution, extending east of the dirt road, including a small cluster east of the outbuilding mound. Two clusters occur, one at the southwest corner of the dwelling and the other in the

Table 6.19

Surface Collection from 41DN429[1,2]

| Unit | C | VG | AR | P | Th | WM | T | E | H |
|---|---|---|---|---|---|---|---|---|---|
| A | 3 | 9 | | | 5 | 1 | | | 1 |
| B | 4 | 22 | 13 | | 26 | 15 | 1 | | |
| C | 4 | 33 | 1 | | 5 | 4 | 1 | | |
| D | 8 | 22 | 4 | | 2 | | | | |
| E | 8 | 38 | 7 | 1 | 13 | 6 | 1 | | 5 |
| F | 6 | 21 | 1 | | 4 | | | | |
| G | 6 | 38 | 7 | 1 | 7 | 2 | | 1 | 1 |
| H | 21 | 42 | 5 | 1 | 9 | 2 | 1 | 1 | |
| I | 17 | 31 | 7 | 1 | 26 | 2 | | | |
| J | 19 | 59 | 6 | 2 | 17 | 4 | | | 2 |
| K | 11 | 32 | 16 | | 14 | 2 | | 1 | 1 |
| L | 8 | 8 | 4 | | 3 | 3 | | | |

1 Only units and artifact categories containing remains are included in table; C=ceramics; VG=vessel glass; AR=architecture; P=personal items; Th=thin and heavy metal; WM=wagon and machine; T=tools; E=electrical; H=household items.

2 Only datable ceramics and bottle glass were used in the calculation of mean beginning dates.

northwest site area. Counts in the active yard ranged from 1 to 50 sherds per 1x.5-m unit, with the highest count of 185 sherds from Unit 15.

Window glass sherds ranged from 0 to 213 sherds per 1x.5-m unit, with a single concentration occuring in the west half of the house mound in Units 26 (n=116), 41 (n=162), and 44 (n=213). Window glass fragments were broadly scattered across the site and occurred in the surface collection area of the outbuilding mound. They ranged from 0 to 213 sherds per 1x.5-m unit, but the highest frequency in the northwestern area was 39 sherds per 1x.5-m unit (Unit 14).

Machine-cut nails and wire nails were both dispersed across the site and clustered in the same site areas. High densities occurred on the north and south edges of the west half of the house mound and in the northwest area. Machine-cut nails ranged from 0 to 39 nails (or fragments) per 1x.5-m unit, while wire nails ranged from 0 to 63 nails per unit.

The early component at the site was masked by the more recent occupations. The architectural items and domestic artifacts from the earliest occupation and later occupations by succeeding generations of the McCurley family overlapped in distribution. They occurred mixed together in both the surface scatter and the excavated units.

Block 1: Density counts are shown for the major artifact categories in Figure 6.30. The values shown represent the total from all levels in each unit. No values were obtained for Unit 49 (in the center of Block 1); it was not excavated because a large fire ant mound was located within this unit.

The original dwelling was built in the 1850s and an addition was built onto the east side in the 1870s. This addition occurs in the west half of Block 1 (Figure 6.24). Artifact densities for Block 1 indicate that the highest densities generally occur outside the dwelling in the

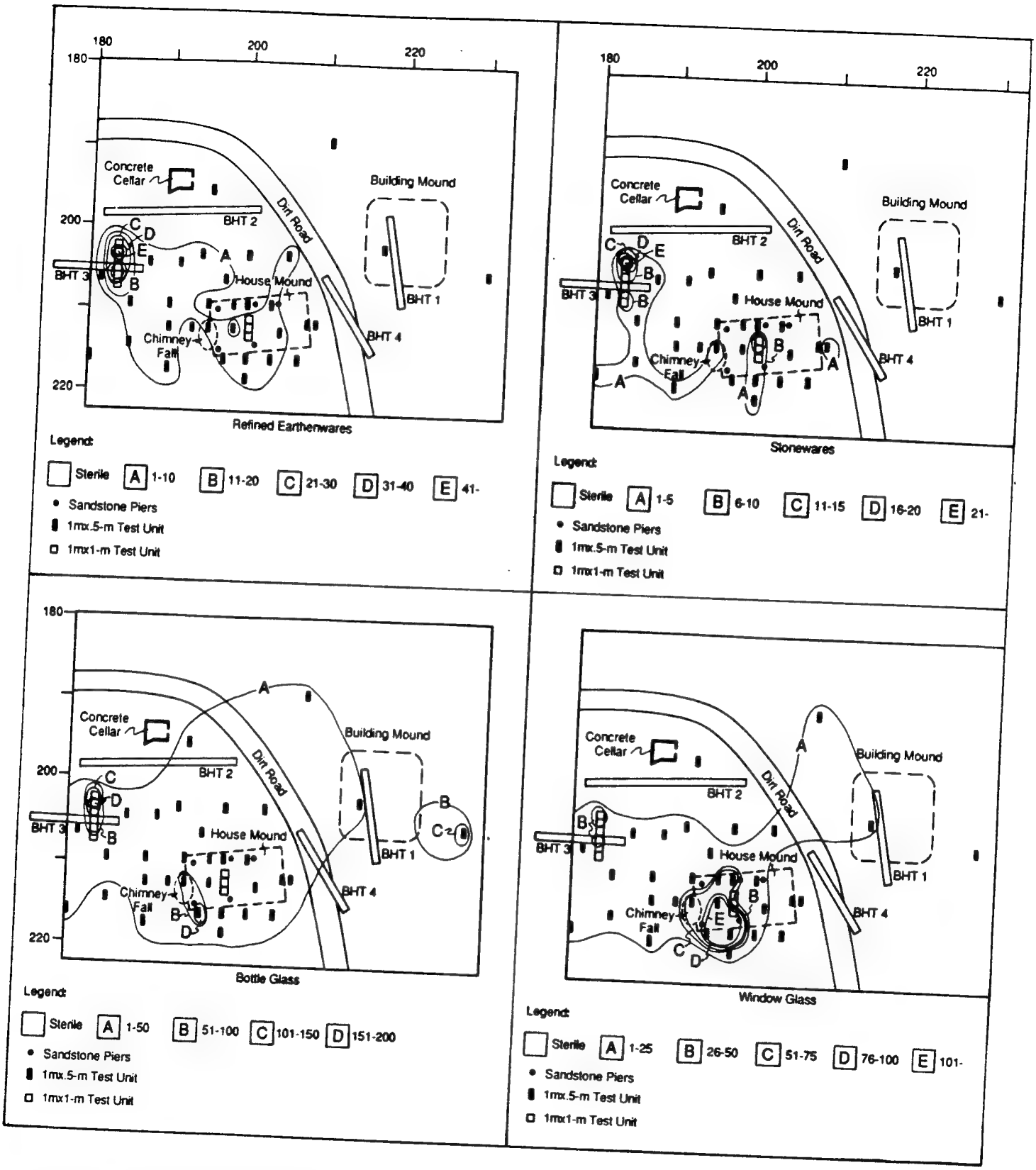



Figure 6.28 Distribution of refined earthenwares, stonewares, bottle glass, and window glass sherds based on artifacts recovered from 1x.5-m and 1x1-m units.

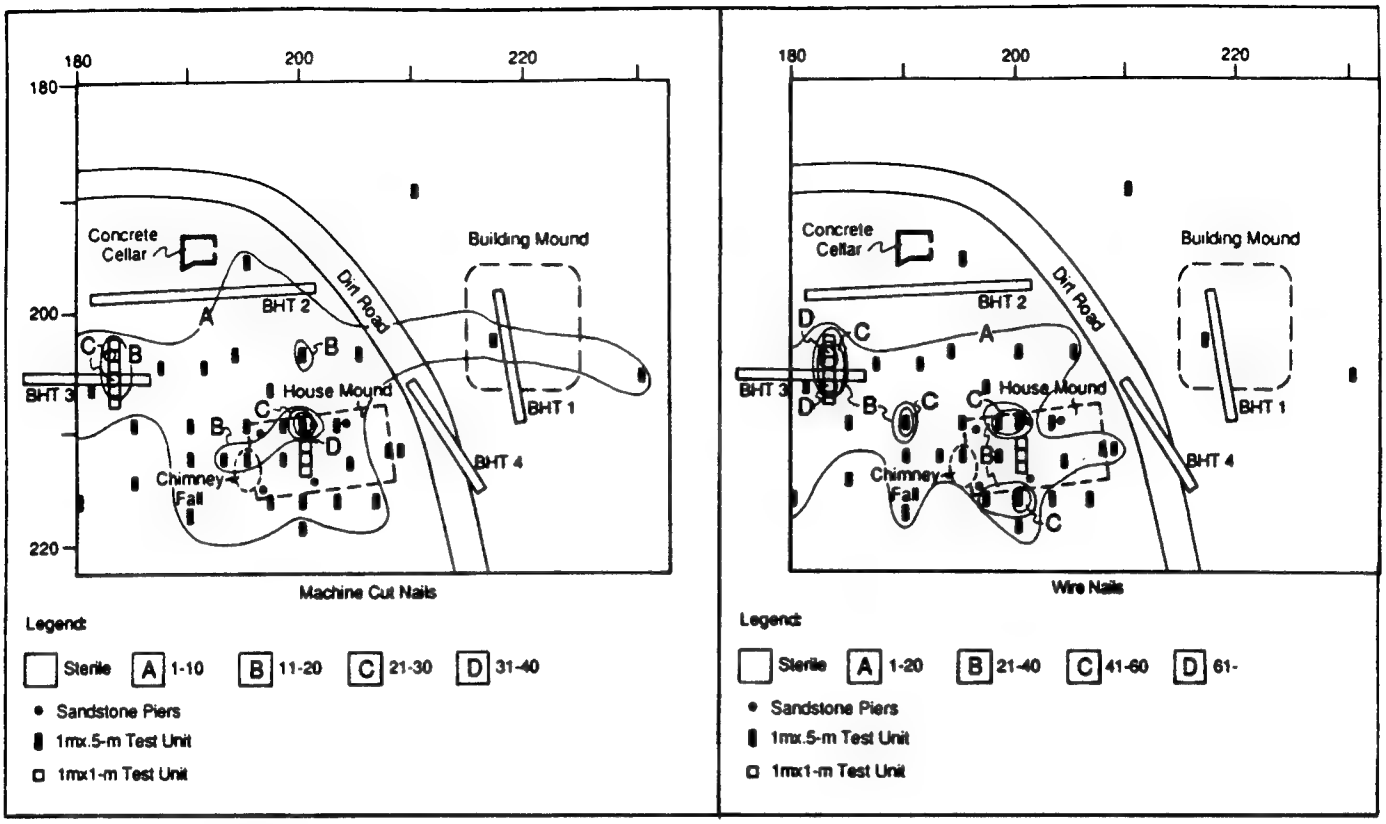



Figure 6.29 Distribution of machine-cut nails and wire nails at 41DN429 based on artifacts recovered from 1x.5-m and 1x1-m units.

southeast corner. Further, Unit 51 (in the southwest corner) contained the highest density of artifacts.

Refined earthenwares ranged from 0 to 40 sherds per 2x2-m unit. They clustered in the southern part of the block, with the highest count occuring in Unit 51. Stonewares clustered in the same part of Block 1, with counts ranging from 0 to 21 sherds per unit. The highest count is in the southeast corner, further from the dwelling than refined earthenwares.

Bottle glass sherds clustered outside the dwelling, forming a band around the house. Comparatively few sherds were found in units under the dwelling.

Window glass sherds clustered in the southwest with a band extending from the northwest unit under the house to the southeast unit in Block 1. Wire nails clustered outside the house in the southeast, while machine-cut nails clustered in one unit under the dwelling and in the southeast.

Personal items clustered close to the house in the southwest corner of Block 1. They were two to 13 times more common in this area than elsewhere in the block.

While Block 1 was small because of the limited distance between the house and the road, data from this block supports the sheet-refuse patterning visible from the density plots for the 1x.5-m units. The architectural debris from the dwelling is mixed with the sheet-refuse deposit in this area, but the nonarchitectural items indicate that refined earthenwares are found around the dwelling, with a small amount under the house, but with the majority forming a band 4-8 m from the dwelling in the backyard and in the east side yard.

Stonewares also occur in these areas, but are generally more frequent further away from the dwelling. Personal items in the block clustered near the southeast corner of the house, but were scattered across the active yard in the sheet-refuse deposit. Architectural debris occurred in the sheet-refuse deposit, in the high-density area, and close to the dwelling. Again, data from Block 1 indicates that the early component at the site is masked by the more recent occupations. The architectural items and domestic artifacts from the different occupations are mixed.

Dating: Mean beginning dates were calculated for the site using all diagnostic, datable refined earthenware, stoneware, and bottle glass sherds recovered during the testing and mitigation phases. These dates are shown below:

| | | |
|---|---|---|
| Refined earthenwares | 1879.0 | (n=627) |
| Stonewares | 1868.5 | (n=148) |
| Bottle glass | 1912.9 | (n=373) |
| Combined | 1888.9 | (n=1148) |

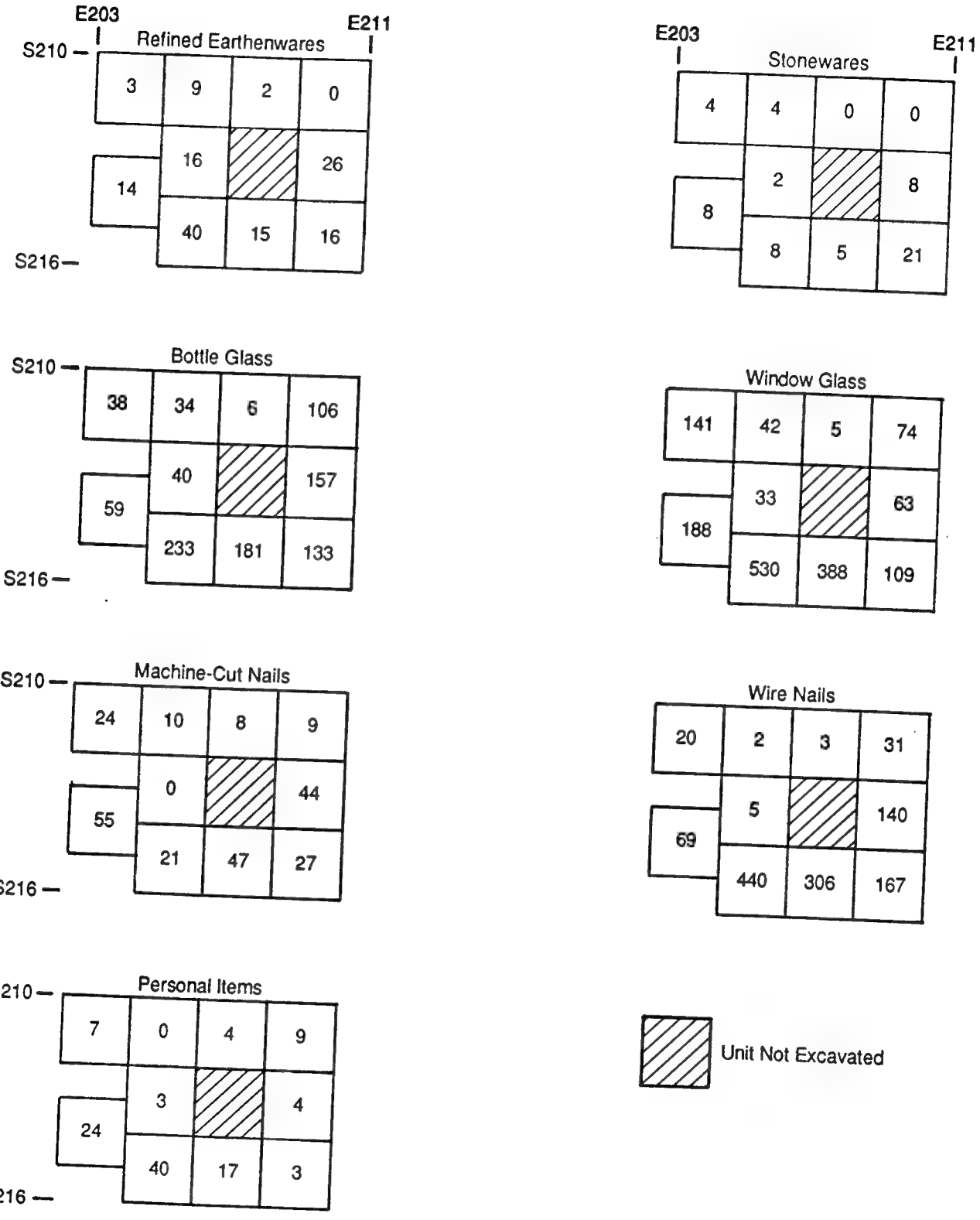



Figure 6.30 Distribution of refined earthenwares, stonewares, bottle glass, window glass sherds, machine-cut nails, wire nails, and personal items in Block 1 at 41DN429.

A thirty-two-year span occurs between the date obtained for the refined earthenwares and the bottle glass sherds. Four factors may account for this pattern and include: (1) the continued occupation of this site until recent, (2) the amount of modern bottle glass sherds, which probably postdate occupation, (3) changes in the amount of disposable items, and (4) the difficulty in identifying datable attributes on small nineteenth century glass sherds. The archival data indicate this site was initially obtained by the McCurley family in 1855. A dwelling was built on the survey during the 1850s and was added onto in the 1870s. The site was occupied up to 1951 when it was purchased by the Corps of Engineers. The amount of modern bottle glass at the site reflects not only the long occupation of the site, but recent trash dumping activity. As traditional lifeways were replaced during the twentieth century the amount of containers that made their way into the yard increased, and later resulted in actual trash dumps. However, during the nineteenth and early twentieth centuries few items were discarded unless they were broken or otherwise no longer usable. As a result, the bottle glass, as well as other types of artifacts, dating to the nineteenth-century occupation at this site are underrepresented and masked in the sheet-refuse deposit by the more recent material.

This problem is less evident, albeit it occurs, at the other historic sites, because they were abandoned before many traditional lifeways were replaced, and before trash-dumping activity became a common practice at rural farmsteads.

The combined MBD of 1888.95 does not correlate well with the archival or architectural data. This date is more than 30 years too recent for initial acquisition of the property, and over 15 years too recent for the east addition to the house (based on the archival data). This suggests that additional modifications were made during the twentieth century.

Faunal Remains:This small sample (N=116) of faunal remains was concentrated in two distinct areas of the site: under and immediately east of the house mound, and northwest of that mound under the cottonwood tree (see Figure 6.24). Identified fauna (Table 6.20) from excavations into the house mound consisted primarily of small animals such as chicken, opossum, squirrel, and rats; however, a few pig and cattle elements were found in this concentration. Bones from fish, pig, and cattle, as well as most of the saw cut bones assigned to large mammals, came from the units northwest of the house. This area probably served as a refuse dump.

Meat cuts represented by elements exhibiting hand-saw marks include the full range of pork and beef cuts (chops, steaks, roasts, hams). Although only one individual of each of these mainstay livestock species is represented in the assemblage, the relative abundance of cut bones suggests a reliable source of meat protein. The presence of butchering waste such as teeth and feet bones (Appendix A) suggests that the animals were butchered (if not raised) on site. Available evidence also indicates that these barnyard animals were immature at death: the chicken bones were incompletely ossified, and several of the large mammal elements were unfused.

Three of the taxa (opossum, squirrel, carp) could represent hunting and fishing activities performed by the occupants either for sport or food supplementation. However, gnawing marks on almost half of the identified bone cautions that dogs were present at some time in the site's history and may have been responsible for the small mammalian game. The presence of carp remains is noteworthy as attesting to the successful introduction and spread of this European-bred species into the rivers and stockponds of Texas in the 1880s (Doughty 1983:161). This assemblage also documents the occurrence of the introduced Old World rat (Rattus norvegicus) in Denton County during the late settlement period.

**Mitigation Summary**: Site 41DN429 is a farmstead occupied by the McCurley family to 1933 when it was sold to the Thurmond family. Belcher (1984) reported that the first house was built in the 1850s, but the artifacts did not reflect this early date. The dwelling was a small log structure with a handmade brick chimney on the west elevation. A frame addition was built onto the east elevation in the 1870s. No chimney was added to this second room. Based on the wire nails and machine-made brick, an addition was probably built onto the house during the early 1900s.

Twentieth-century structures found at the site include a concrete cellar built in 1940. A large outbuilding mound is located northeast of the dwelling. No well was found, but Belcher (1984) reported the well as 100 feet east of the dwelling and that a detatched kitchen was located off the northwest corner of the house. Neither of these features were found.

The sheet-refuse deposit is moderate density, clustering in the northwest area, with a less dense band around the dwelling, with considerably less material in the south or front yard. A surface scatter occurs in the northeast yard, between the trash dump and the road, and covering the east half of the outbuilding mound. In summary, 41DN429 was reportedly occupied from the 1850s to 1950s, but little evidence of pre-1870s material was found.

Table 6.20

Identified Vertebrates and
Bone Counts from 41DN429

| Taxon | NISP | MNI |
|---|---|---|
| Carp (*Cyprinus carpio*) | 1 | 1 |
| Fish, indeterminate | 2 | 1 |
| Chicken (*Gallus gallus*) | 3 | 1 |
| Opossum (*Didelphis virginianus*) | 1 | 1 |
| Fox squirrel (*Sciurus niger*) | 3 | 1 |
| Norway rat (*Rattus norvegicus*) | 3 | 1 |
| Cottonrat (*Sigmodon hispidus*) | 1 | 1 |
| Pig (*Sus scrofa*) | 7 | 1 |
| Cattle (*Bos taurus*) | 8 | 1 |
| Large mammal | 19 | 1 |

Total bone = 116,
ID = 44 (38%) (20 Burned)
unid = 72 (17 Burned)

## INTERSITE COMPARISON AND SUMMARY

This section provides a comparison of the site age, size, content, complexity, and spatial patterning of sites 41DN401, 41DN404, and 41DN429. These comparisons are based on the data presented in Chapter 5 and the above sections of Chapter 6, excluding the ceramics. The detailed ceramic data presented in this section are not discussed elsewhere in the text.

### Site Age

Site age was determined using both archival and archaeological data. The archival data were recovered from deed/title records for the land tracts these sites are located on, and historic maps including the Lewisville Lake area (1918, 1925, 1936, 1946, 1961). The archaeological dates are based on mean beginning dates (MBD) calculated for several major artifact categories. The data ranges obtained for these sites are listed below.

| | |
|---|---|
| 41DN401 | 1870s/80s to 1940s/50s |
| 41DN404 | 1870s to 1920s/30s |
| 41DN429 | 1850s to 1950s |

These dates indicate that the three sites were initially occupied in the mid- to late nineteenth century. The earliest site occupied is 41DN429, but 41DN404 was occupied for the shortest period.

Discrepancies between archival dates and archaeological MBD data are most evident for bottle glass sherds (Figure 6.31). The MBD values obtained for bottle glass sherds were consistently higher than the archival dates for these sites. The greatest discrepancy occurred at 41DN429. The bottle glass MBD value at 41DN429 is more than 50 years too recent. This date points out the difficulty of obtaining reliable MBD values for sites occupied into the mid-twentieth century. This problem aside, the data in Figure 6.31 indicate the close correlation of refined earthenware, stoneware, and archival data. Again, the largest variability occurred at 41DN429.

### Site Size

Archival data on site size was obtained from deed/title records. These figures are the number of acres owned, not the number occupied, nor the number directly associated with a particular farmstead. Some of the sites in the lake area, including the mitigation sites, were located on large tracts of land containing more than one farmstead. Using the deed/title data alone would result in erroneous estimates for some sites.

Site size was determined for the "living area". It was calculated by determining the surface and subsurface distributions of features and artifacts (see Chapter 8 for a more detailed discussion). The size of the "living area" for the three sites ranged between 2,000 and 2,200 square meters, and each was located on between 200 and 320 acres.

### Site Content

The site content of the three sites is discussed in detail in the site description section of this chapter, and will not be repeated here. The major artifact categories defined for the project were found at each of these sites. However, variability in relative frequencies for these categories occurred between sites.

The twenty-four artifact categories were collapsed and combined into eight categories (Figure 6.32) for comparing the assemblages from these sites. Ceramics include semi-coarse earthenwares, refined earthenwares, stonewares, and porcelain wares. Vessel glass includes bottle, table, lamp, and unid. glass. Architecture includes window glass, cut and wire nails, handmade and machine-made brick, and buiding material. Personal items include an assortment of clothing, toys, muscial instruments, and other personal belongings, while thin and heavy metal is all unidentifiable metal. The tin can category includes a variety of metal tin can fragments. Household items are all furniture and appliance parts. Machine, wagon, hardware, and tools are combined. Ammunition and horse and stable items make up the last two categories.

Tin can fragments were not included because their counts were often inflated by breakage during excavation. Architectural items were excluded because the counts for these remains correlate with building technology, style, and integrity, rather than cultural trash-disposal behavior. Architectural frequencies are high at sites occupied for longer periods, sites with frame structures, and sites with collapsed rather than standing architecture (see site descriptions section).

The data shown in Figure 6.32 indicate that after excluding architecture remains and tin can fragments from the counts, vessel glass sherds are the most common artifacts found. Ceramics are the second most common, and 41DN429 thin and heavy metal is slightly more frequent than ceramics. All the other categories are rare, accounting for between zero and 5%.

Ceramics were selected to examine content variability between the sites at a more detailed level. The four major ceramic categories are shown in Figure 6.33. Semi-coarse earthenwares (primarily flower pots) are rare at all sites. Refined earthenwares are the most common. Site 41DN404, which was occupied for the shortest period (ca.1870 to 1920/30) contains the highest percentages of refined earthenwares and stonewares. Site 41DN401 is similar, but has a higher percentage of porcelains. The lowest frequencies occur at 41DN429, reflecting the long occupation of the site, and the abundance of twentieth-century bottle glass and thin and heavy metal.

Figure 6.34 shows the relative frequencies for major refined earthenware types. The types are presented in chronological order based on popularity dates. The data for 41DN401 and 41DN429 are similar, again reflecting the continued occupation of these sites into the 1940s-1950s period. The earlier abandonment of 41DN404 is clearly indicated by the absence of twentieth-century styles (ivory-tinted whitewares (1920-1990) and fiesta-glazed whitewares (1930-1960s), and the low frequency of white whitewares (1890-1990).

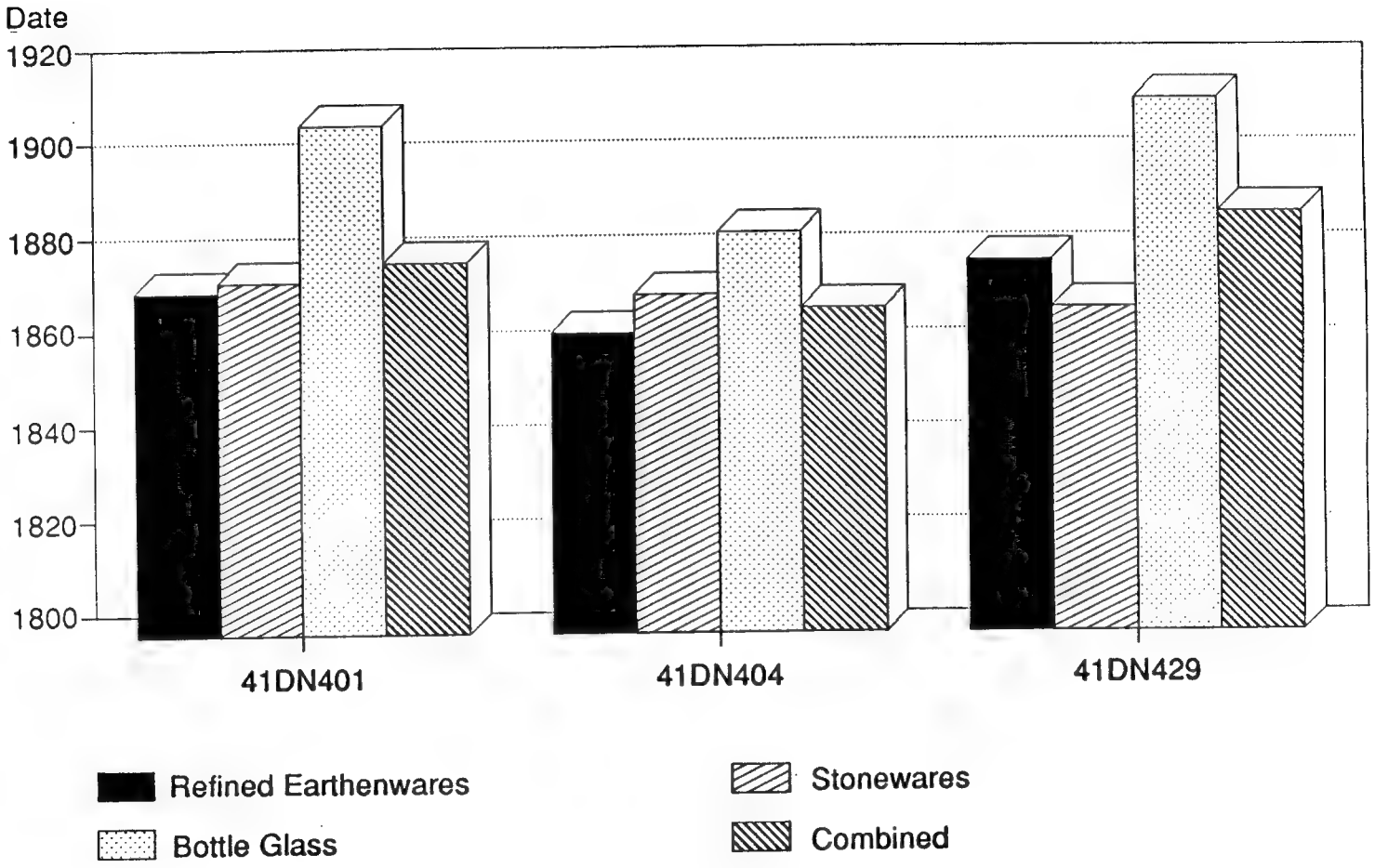



Figure 6.31 Comparison of the mean beginning dates (MBD) for refined earthenwares, stonewares, bottle glass, and the three categories combined for sites 41DN401, 41DN404, and 41DN429.

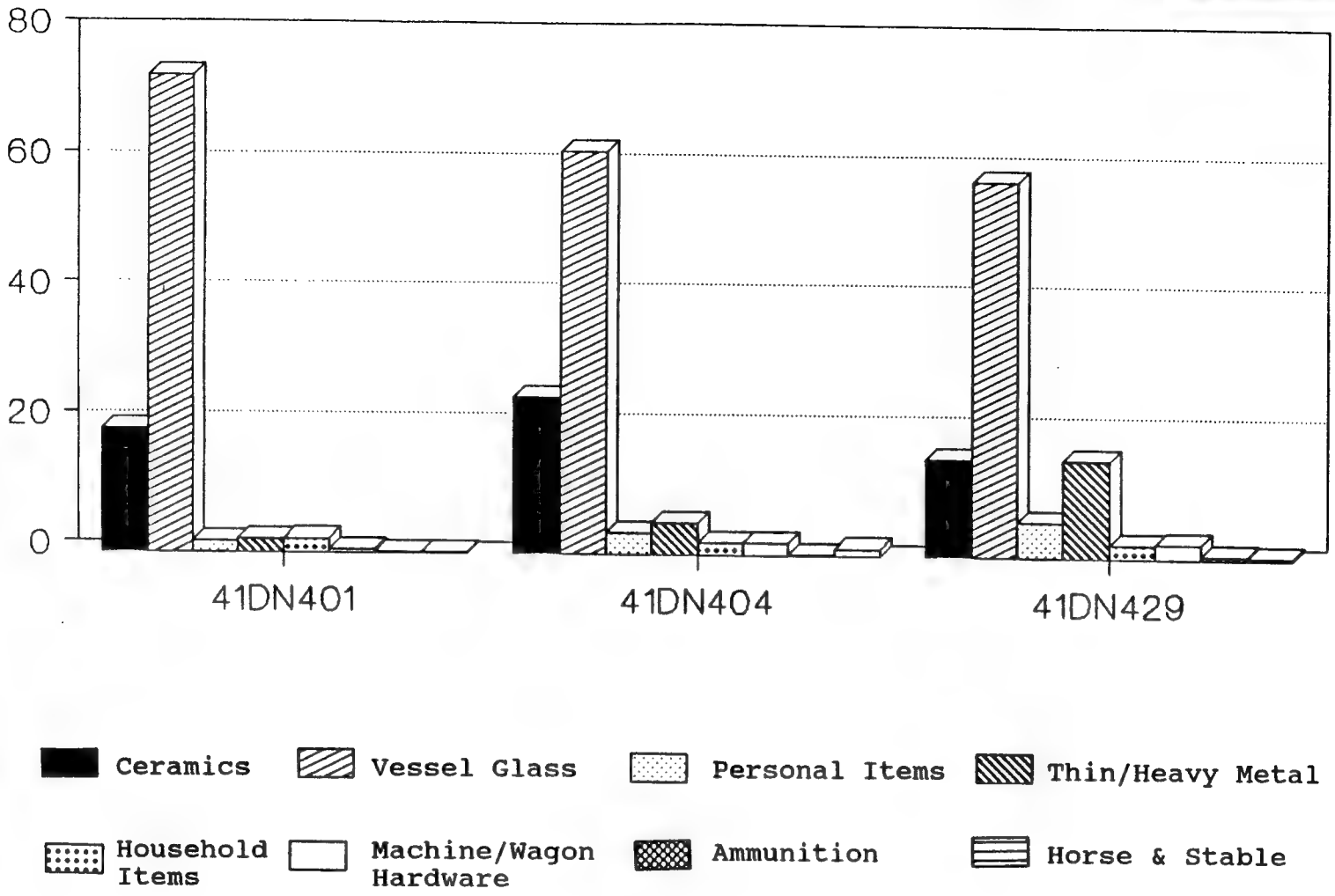



Figure 6.32 Comparsion of the relative frequencies of ceramics, vessel glass, personal items, thin and heavy metal, household items, machine/wagon &hardware, ammunition, and horse and stable gear at 41DN401, 41DN404, and 41DN429.

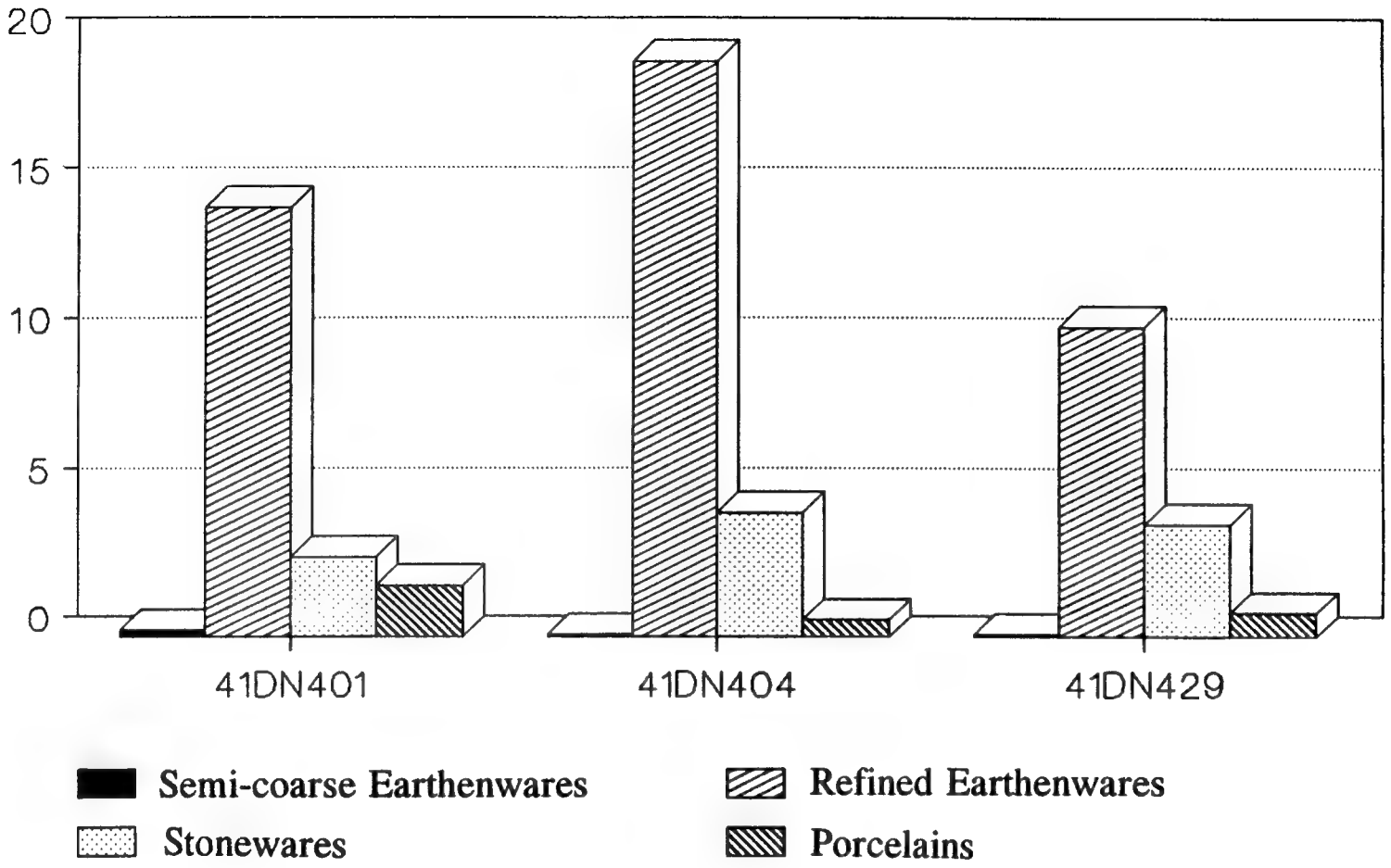
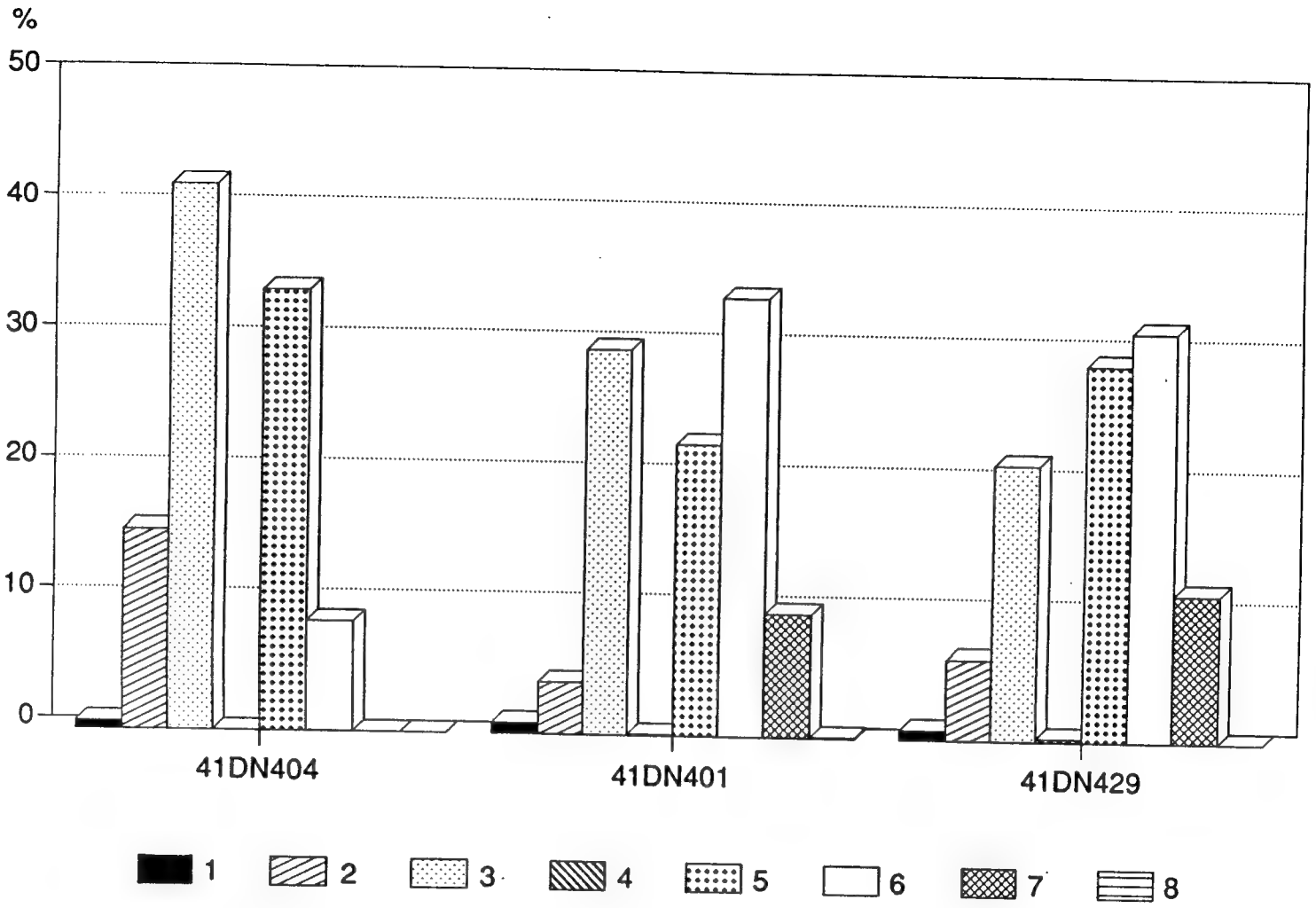


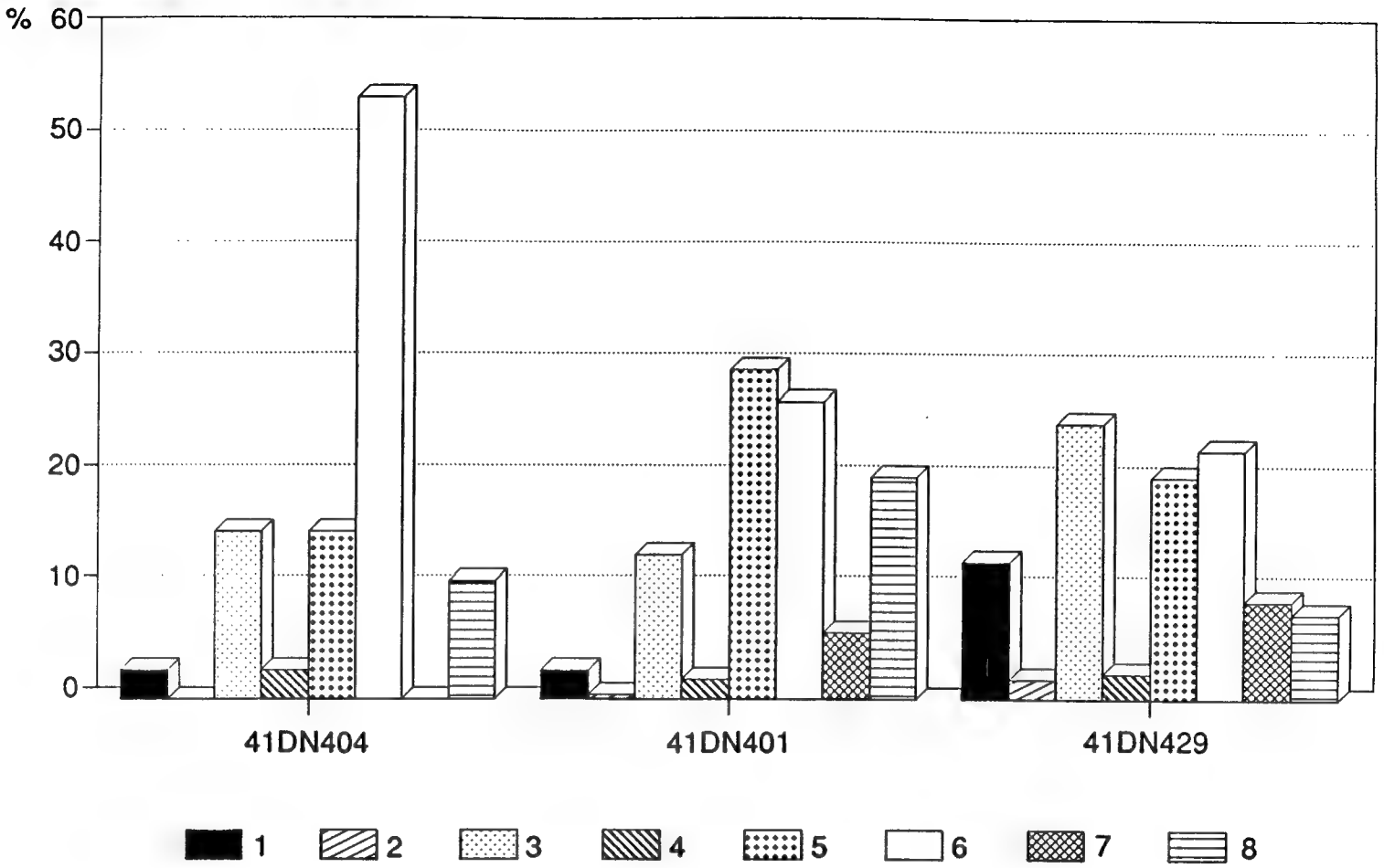

Figure 6.33 Comparison of the relative frequencies of semi-coarse earthenwares, refined earthenwares, stonewares, and porcelains at 41DN401, 41DN404, and 41DN429.




Legend

1 Early white whitewares
2 Bluish-tinted high-fired ironstones
3 Bluish-tinted nonvitrified ironstones
4 Flow blue and imitation flow blue
5 Blue-tinted whitewares
6 White whitewares
7 Ivory-tinted whitewares
8 Fiesta-glazed whitewares

Figure 6.34 Comparison of the relative frequencies of refined-earthenware types at 41DN401, 41DN404, and 41DN429.




Legend

1 Salt glazed interior/salt glazed exterior
2 Alkaline glazed or natural clay slipped interior/alkaline glazed exterior
3 Unglazed interior/salt glazed exterior
4 Unglazed interior/natural clay slipped exterior
5 Natural clay slipped interior/salt glazed exterior
6 Natural clay slipped interior/natural clay slipped exterior
7 Natural clay slipped interior/bristol glazed exterior
8 Bristol glazed interior/bristol glazed exterior with or without cobalt blue decoration

Figure 6.35 Comparison of the relative frequencies of stoneware types at 41DN401, 41DN404, and 41DN429.

Ironstones (types 2 and 3) represent over 50% of the refined earthenware assemblage at 41DN404 (1850-1910), with blue-tinted whitewares (1880-1930) accounting for just over 30%. At 41DN401 and 41DN429, this pattern is replaced by a predominace of types dating after 1880. These later types (5, 7, and 8) account for over 65% of the assemblage at 41DN401 and over 70% at 4141DN429.

The stoneware data for the mitigation sites are shown in Figure 6.35. The types are presented in chronological order based on popularity dates. Rare stoneware types in the Lewisville Lake area include salt-glazed interior/exterior, alkaline-glazed stonewares, and unglazed interior/natural clay-slipped exterior stonewares. Each of these types are found at 41DN401 and 41DN429.

The long duration of occupation at 41DN429 is clearly evident in the stoneware data shown in Figure 6.36. The types are presented in chronological order based on popularity dates. Salt-glazed interior/exterior stonewares are most common at 41DN429. Alkaline-glazed stonewares, extremely rare in the Lewisville Lake area occur at 41DN401 and 41DN429. When found in this area, this type is probably associated with vessels brought with families as they immigrated to the area. No alkaline stonewares were made in Denton County.

The stonewares from 41DN429 include a relatively equal amount of both early and late stoneware types. On the otherhand, 41DN404 contains primarily pre-1900 stoneware types. Natural clay-slipped interior/exterior stonewares became popular about 1875.

In summary, comparison of the artifact content for the sites indicates similarity in the relative frequencies for different artifact categories, but important variability within categories.

### Site Complexity and Spatial Patterning

The mitigation sites contain a number of components, features, and structural remains, as well as good evidence of well-defined sheet-refuse deposits. Site complexity was relatively defined for each site based on site size (see above discussion), the number of components, and the type and frequency of features and structural remains. Spatial patterning is the vertical and horizontal distribution of components, features, and structures.

Site complexity at the three sites was remarkably similar. Extant features at 41DN401 include a house mound, collapsed chimney, the hearth, dwelling piers, a concrete cellar, a concrete water trough, a capped well and a windmill foundation. Extant features at 41DN404 include a brick scatter from the house chimney and two kitchen-related artifact-rich ash deposits. No well, windmill, cellar or other outbuildings were found. Features at 41DN429 include a house mound and brick chimney fall, an outbuilding mound, and a concrete cellar.

The mitigation sites exhibited less complexity than expected. The "living area" contained relatively little evidence of outbuildings, few wells or windmills, and cellars were variable. Cellars were the most common support structure found. The second mound at 41DN429 indicates an outbuilding, but no sheds or barns were found at the other two sites. The kitchen-related features at 41DN401 indicate detached kitchens or outdoor cooking areas near the dwelling. Similar features were not found at 41DN404 and 41DN429 although they probably occurred. The absence of wells at 41DN401 and 41DN429 may reflect the proximity of these sites to running water, that the wells were located away from the dwelling, or they are under Lewisville Lake. This latter possibility is suggested by Belcher (1984), who reported that the well was 100 feet east of the dwelling at 41DN429.

The distance between structures varied at the three sites. At 41DN401, all of the support structures were located within 20m of the dwelling. These include the cellar, well, and windmill, and the barbed wire fence surrounding the house yard. At 41DN404, the distance between the dwelling and support structures was much larger. This pattern suggested that several house sites may have been located here. However, this was not supported. Feature 1 (kitchen-related deposit) is located about 25 m from the dwelling, while Feature 2 (kitchen-related feature) is located about 4-6 m west of the house. No other support structures or features were found. The distribution of features and structures at 41DN429 were more dispersed. The cellar is about 15m northwest of the dwelling and an outbuilding mound is about 10m northeast of the house. A dump is 10 m east of the outbuilding mound. The dirt two-track road at 41DN429 is about 2-4 m from the house, while at 41DN404 it is about 35 m away. If Belcher (1984) is correct about the placement of the well, this information indicates that the distance between the dwelling and some support structures is greater than expected.

The spatial patterning data obtained for the sheet-refuse deposits indicates the "living area" ranged between 2100 and 2200 square meters at these sites. The sheet-deposits were shallow, averaging 10-20 cm below surface, but varied in density. The distribution of major artifact categories are discussed in Section Two and indicate intact sheet-refuse deposits occur at each site. The general sheet-refuse patterns found at Richland-Chambers Creek (Jurney and Moir 1988; Moir and Jurney 1988) and Joe Pool Lake (Jurmey, Lebo, and Green 1988) occur at these Lewisville Lake historic mitigation sites. These include a concentration or banding of domestic remains 4 to 12 m from the dwelling primarily on one or both sides of the house and the back. Less sheet-refuse material occurs in the front yard, and artifact densities decrease greatly over 12 m from the house. High-density clusters in yard areas away from the dwelling often reflect buried features such as trash dumps. Artifact densities in and around outbuildings and the outer yard areas is low, with the highest densities occurring near extant structures and fences, or in surface dumps. Few outbuildings are visible in the archaeological record in the absence of extant surface architecture. Many outbuildings were small and if they did not collapse and decay *in situ* relatively few architectural remains are recovered from the archaeological record. Smokehouses, barns, sheds, and chicken coops occurred on farms in this region, but few have been identified in the archaeological record in the absence of extant architecture. Cellars, wells, windmills, and fences are the most commonly recorded outbuildings or structures identified in the project area. In summary, the Lewisville Lake historic mitigation sites, 41DN401, 41DN404, and 41DN429, are farmsteads dating between the 1850s and 1950s. These sites were serially occupied, contain intact sheet-refuse deposits, and architectural and archaeological features.

# CHAPTER 7

# FAUNAL REMAINS FROM THREE NINETEENTH CENTUFY FARMSTEADS AT LEWSIVILLE LAKE, TEXAS

by
Bonnie C. Yates

## Introduction

Animal bones from historic sites are generally well preserved and consist primarily as the results of food refuse left by human occupants in the recent past. They are either deposited near living quarters or dispersed by scavengers and covered by later occupational debris. Historic faunal remains are composed primarily of domesticates; however, the abundance and kind of wild species present in an historic site faunal assemblage can be indicative of ethnicity and socioeconomic status, or conjectural about the recreational lifestyle of the site's occupants. "Hunting," states Doughty (1983:79), "like free land, was one of the lures of the frontier."

Archaeological projects with interdisciplinary research designs that include zooarchaeology have recently added much to the corpus of knowledge about this frontier generation. Martin and Phillippe (1986) examined historical documents, ceramic data, and faunal remains to correlate socioeconomic status and subsistence at a northern Illinois nineteenth century farmstead. Another example, Drayton Hall (Miller and Lewis 1978), was occupied by a single family for 230 years in South Carolina; it yielded patterns of husbandry practices and butchery methods of landowners who started as immigrant settlers and then formed the ancestral stock from which westward-moving pioneers originated. Studies like these and Cynthia Price's (1985) exemplary report on the zooarchaeology of the Widow Harris site in southwestern Missouri provide comparative basis for the interpretation of rural homesteads in Texas.

Relatively little historic archaeology has been conducted in the North Texas area. Cultural resources investigations have been conducted in recent years at regional reservoirs of Lakeview Lake (which became) Joe Pool Lake, Richland-Chambers Reservoir, Cooper Lake, and Ray Roberts Lake. These investigations have resulted in zooarchaeological reports (viz., Yates 1982; Jurney 1987, 1988; Yates 1989, 1991, for each reservoir respectively) that can be used with the findings of the present study to formulate regional patterns of subsistence and resource utilization (see Research Design, Chapter 3).

These reservoir studies constitute the only suite of cultural resources of the farmstead settlement period in Northcentral Texas (c. 1830-1880). There are few sites in urban settings (e.g., 41DL279); these urban sites are theoretically incomparable to farmstead settings because access to markets and transportation terminals would have permitted acquisition of a greater variety of foods, different foods, and different food-related items for these early urban dwellers. Thus, faunal remains and the patterns inferred from urban sites regarding subsistence procurement, food preparation, and refuse disposal are expected to differ and will not be explored here.

The present study seeks to characterize rural subsistence practices for three late nineteenth century farmsteads in Denton County and to place these findings in a regional perspective. The faunal samples are not large, averaging only four fragments per excavated unit. It is the distribution and concentrations of faunal remains, as well as the composition of species recovered, that will be characterized. Minimum numbers of individuals are correspondingly low, reflecting the short-term occupation of each site and/or the failure to detect additional disposal areas during archaeological investigation.

The remainder of this chapter will present a brief description of the methods employed in the faunal analysis, results of species identification and quantification, spatial distribution of the remains, and commentary on nineteenth century foodways. Appendix A provides an inventory of all identified bones listed by taxon, giving the element recovered and its provenience. All faunal material, coding forms, and analysis documentation are presently curated at the Zooarchaeology Laboratory in the Institute of Applied Sciences at the University of North Texas.

## Methods

Standard zooarchaeological methods have been used. The animal bone was washed and sorted in the field lab and submitted for identification and quantification. Provenience was rigorously maintained. Unidentified fragments were divided into unburned and burned categories and counted. Attributes of identified elements were recorded as taxon, body part, side of body, element portion, age, condition (burning), modification, and taphonomic appearance.

Quantification of faunal assemblages is summarized as minimum number of identified specimens per taxon (NISP) and as minimum number of individuals (MNI) for identified elements. MNI estimates were calculated according to the most frequent element, based on symmetry and element portion (Munzel 1986) and then determined by adapting Grayson's (1978) minimum distinction method. Other considerations in determining MNI include age (based on dental eruption/occlusal wear) and/or epiphyseal fusion, and also on the relative sizes of otherwise analogous specimens in the comparative collection.

The faunal data tables in this report are standard species lists, providing for each specified archaeological component a count of elements attributed to each taxonomic category and the minimum number of individuals represented by those elements. Animal bone recovered from test pits, backhoe trenches, units outside the main excavation blocks, and surface collections were recorded and tabulated; however, the data from these proveniences are generally omitted from total bone counts

and the species lists for each site. All faunal data will be curated with the collections.

Species identifications were made at the Zooarchaeology Lab at the University of North Texas, with occasional recourse to standard osteological keys such as Olsen (1960, 1964, 1968), Gilbert et al. (1981), Hillson (1986), and Sisson and Grossman (1953). Only positive identifications resulted in assigning elements to taxonomic categories of genus or species.

Elements of non-diagnostic skeletal value (e.g., ribs, long bone shafts; see Olsen 1961) are tabulated in what is called a "indeterminate" category by class and size range. Recording these bones in a size category allows as fine a level of observation as the specimen permits; otherwise, the specimen would be considered unidentifiable. In small samples, noting size categories of non-diagnostic elements broadens the utility of the bone assemblage. For example, specimens counted as "indeterminate mammal, large" are probably derived from pig, deer, cattle, bison, or horse.

## Results

An intrasite comparison (Table 7.1) of the faunal assemblages from the three historic sites described in this study shows them to be similar to each other and basically typical for the period. That is, the assemblages are dominated (NISP/MNI) by pig, cattle, and chicken -- the staple protein sources of modern diets. These are the predominate animals found in species lists of most, if not all, nineteenth century Euro-American urban or farmstead sites (e.g., Jurney 1988: Table 25-2; Yates 1982:290-292; Yates 1989:117).

Table 7.1
Selected Taxa from Three Historic Sites, Lewisville Lake

| Taxon | 41DN401 | 41DN404 | 41DN409 |
|---|---|---|---|
| Fishes | X | X | X |
| Turtles | X | X | |
| Chickens | X | X | X |
| Game Birds | X | | |
| Opossum | X | X | X |
| Rabbits | X | X | |
| Squirrel | X | | X |
| Rodents* | X | X | X |
| Rodents** | | | X |
| Skunk | X | | |
| Raccoon | X | X | |
| Deer | X | | |
| Pig | X | X | X |
| Cattle | X | | X |
| Horse | X | X | |

* New World rodents
** Old World rodents
Note: Values for pig and cattle are number of identified specimens/minimum number of individuals.

41DN401

A diverse collection of 18 taxa indicates either a long-term occupation and/or a very active farm, whose occupants probably supplemented their livestock meat source with hunting and fishing (Table 9.3). Almost 90% of the vertebrate faunal remains were recovered from the excavation units placed under, around, and immediately north of the house mound (Figure 9.10). From excavations in the area that would have been directly under the house, remains of small animals have been recorded; these include duck, chicken, opossum, cottontail, squirrel, and a few cut-marked large animal bones. The terminal phalange of a horse and two deer elements were found adjacent to the hearth. Along the south wall of the house was a cluster of eggshells (probably chicken), remains of cottontail, cotton rat, and some pig teeth fragments.

The greatest concentration and diversity of identified vertebrates was found near the northwest corner of the house. There, as many as twelve individual taxa have been identified; these include remains of catfish, chicken and other birds, opossum, cottontail, jackrabbit, squirrel and other rodents, and many saw-cut bones. Another, more dispersed concentration, was found in the block excavations north of the house mound. In neither cluster is there a distinct pattern to the distribution of taxa. It appears to be dominated by refuse from butchering large mammals such as pig and perhaps cattle; however, fish and smaller game, such as those animals already mentioned, as well as naturally occurring fauna (turtles, rodents, skunk?) are scattered within this midden area.

To complete the areal distribution of faunal remains, it should be noted that outlying units yielded very few identified bones. Isolated bones of pig, clearly the most important animal represented in this assemblage, were recorded from units 25 m west and north of the house. A raccoon bone and a rib from a large bird were found 35 m northwest of the house; these animals may be incidental to the occupation.

Whether such wild game as raccoons, opossum, squirrels, and rabbits were actually hunted for subsistence or brought to the site by dogs is difficult to determine. Even though few of the bones associated with these wild species show gnaw marks, carnivore and rodent gnawing was recorded on about half of the identified bones from domesticated animals. No cut marks were observed on the remains of these game animals; however, some were charred. Burning is not reliable as an indicator of human consumption activities because trash burning can result in the charring or incineration of many animals not associated with food use. Nevertheless, oral historical sources available for this area state that indeed these wild game were hunted and consumed (Bridges 1978; Lohse 1990).

Butchered bones of large mammals dominate this faunal collection. The majority of cut-marked large mammal bones was concentrated about 5 m north of the house mound, with a smaller cluster just outside the northwestern corner of the house mound. The identification of pig and cattle suggests that the saw-cut fragments in the large mammal category are also from these domesticated species. The cuts represented in this sample indicate full use of the carcasses (hams, chops, roasts, steaks). Home butchering is indicated by the presence of waste bone such as feet and teeth fragments.

41DN404

Site 41DN404 differs from the other two sites in the relative abundance of fish and game remains and in the lack of butchered bones from large domesticates. The absence of important game species (namely, deer and turkey) argues against the supposition that the site's

occupants lived "off the land" more than did the occupants of the other sites. This site also yielded the most bone (N=1,601), of which 25% was identified. Most of the unidentified fraction came from fine-screened samples, thus indicating a high degree of fragmentation. It is possible that the total yield is a reflection of collection method and an artifact of quantification. The important point is that large, durable bones of cattle, pig, and horse are not abundant, and that this paucity of large mammal remains cannot be accounted for by preservation or collection factors.

The high percentage of identified bones is skewed by an abundance of fish scales and eggshells (over 60% of the identified taxonomic categories), but sparse. They consist mostly of fishes, turtles, a snake species, and birds. The role that these wild species played in the subsistence of the farmsteaders is not at all clear. The fishes almost certainly were consumed and disposed of on site. The turtles, snake, small bird, and rodents are most likely intrusive to the archaeological deposits. That leaves the domestic species and small game such as opossum, cottontail, and raccoon.

Of the domesticates (pig, chicken, and horse), very few elements were recovered, and MNI for all of these is one individual. For those elements assigned only to size category, some were coded because they exhibited cut marks, but were not identifiable to a particular animal. A total of six fragments were coded as having cut marks, all but one were long bone shafts from large mammals, probably pig; the exception was a leg bone of a chicken. The types of butchering cuts could not be determined, but all were made with a hacksaw.

The distribution of faunal material follows that of the artifacts; that is, the bone is clustered (Feature 2) around the house location (brick scatter, Figure 9.10) in the southeast portion of the site, and another cluster is found in the units associated with Feature 1 northwest of the house. Both of the fetures identified in these areas have been interpreted as food processing stations, either as an outdoor cooking/smokehouse area (Feature 1) or as a detached kitchen/refuse dump (Feature 2).

41DN429

This small sample (N=116) of faunal remains was concentrated in two distinct areas of the site: under and immediately east of the house mound, and northwest of that mound under the cottonwood tree (Figure 9.24). Identified fauna (Table 9.20) from excavations into the house mound consisted of primarily small animals such as chicken, opossum, squirrel, and rats; however, a few pig and cattle elements were found in this concentration. Bones from fish, pig, and cattle, as well as most of the saw-cut bones assigned to large mammals, came from the units northwest of the house. This area probably served as a refuse dump.

Meat cuts represented by elements exhibiting hand-saw marks include the full range of pork and beef cuts (chops, steaks, roasts, hams). Although only one individual of each of these mainstay livestock species is represented in the assemblage, the relative abundance of cut bones suggests a reliable source of meat protein. The presence of butchering waste such as teeth and feet bones (see Appendix A) suggests that the animals were butchered (if not raised) on site. Available evidence also purports that these barnyard animals were immature at death: the chicken bones were incompletely ossified, and several of the large mammal elements were unfused (diaphyses and epiphyses).

Three of the taxa (opposum, squirrel, carp) could represent hunting and fishing activities performed by the occupants either for sport or food supplementation. However, gnawing marks on almost half of the identified bone cautions that dogs were present at some time in the site's history and may have been responsible for the small mammalian game. The presence of carp remains is noteworthy as attesting to the successful introduction and spread of this European-bred species into the rivers and stockponds of Texas in the 1880s (Doughty 1983:161). This assemblage also documents the occurrence of the introduced Old World rat (*Rattus norvegicus*) in Denton County during the late settlement period.

## Commentary

Hunting and fishing was certainly undertaken to supplement the diets of these early Texans, as well as a form of recreation in later times. From these archaeological records, it is apparent that, in northcentral Texas at least, the large herds of deer and flocks of turkeys that attracted mid-nineteenth century settlement had dwindled substantially by the turn of the century. Deer remains were not prominent at the investigated historic sites at Lewisville, and turkey was not recovered at all. Opossum, rabbit, squirrel, and raccoon provided game meat, and the creeks provided a variety of fishes. There is no evidence of bullfrogs, and therefore, eating froglegs does not appear to have been a comestible. Assessing the role of turtles at historic sites is troublesome because their remains may become accidentally incorporated into the cultural refuse; nevertheless, turtle soup is mentioned frequently in old recipe books.

Domesticated animals formed the nucleus around which the subsistence of early settlers depended. In his definitive study of the food supply in the Antebellum South, Hilliard (1972:112) acknowledged the challenging task of assessing the importance of beef in Southern economy. Taylor (1982:113) notes that southerners probably ate less beef after the Civil War than before, and when they did, it was either as veal or as part of a celebration where great quantities of all kinds of meat were warranted. Jurney (1978:Figure 9) has noted a seasonal trend from the records of an Arkansas butcher in increased beef purchases during the late summer. This coincides with the seasonal depletion of hams and salted pork and prior to hog-killing time.

Pork is cited time and again by Hilliard and other researchers (e.g., Wigginton 1972:189; Peden 1974:112; Howell 1981:100-102; Taylor 1982; Price 1985:48; Pate 1988) as being the meat of choice for this homesteading period all along the spreading frontier. Reasons for this preference stem from its taste (high fat content) and to the relative ease of butchering hogs and preserving the meat. On the frontier, most immigrating families brought their own hogs and chickens specifically to raise as food sources when they resettled. Both domesticates can subsist on free ranging, thus requiring no specific fodder. The cattle that were brought along were specifically needed for draft (oxen) or dairy (milch cows).

Preservation of relatively moderate amounts of pork (estimated meat yield = 146-176 lbs.) was more manageable than beef (meat yield = 340-420 lbs.) (Eastman 1975), which was generally eaten fresh and thus produced more meat than a nuclear family could consume.

Beef was considered harder to cure, with pickling and drying as the most commonly used methods of preservation; it was also believed to be nutritionally inferior to pork, and when fed to slaves, the allowences were generally higher (two lbs to one) than pork (Hilliard 1972:58-59).

These opinions likely came with the early settlers to North Texas. "When early Texans said 'meat', they meant pork" according to Linck and Roach (1989:4). This synonym is echoed in the recollections in many of the oral interviews of first generation North Texans. Eunice Gray, when asked how her parents lived in early Denton County, replied, "I would think that they lived like other people. They made their own sausage, and mincemeat and killed their own hogs..." (Lohse 1990).

Reminiscences of hog butchering survive most vividly, and canning the meat of pigs and chickens was sometimes an ordeal when spoilage rendered futile all that hard effort. Memories of owning and tending cattle seem more common and are recalled with greater satisfaction. Perhaps the myth of Texas beef as the symbol of success and prosperity is savored as much as the taste of a good beefsteak. The zooarchaeological record of farmsteads occupied between 1870 and 1930 in Northcentral Texas strongly submits a case for hog meat and fowl flesh as the mainstays of the meat diet, with the occasional good fortune of a fatted calf.

# Chapter 8

# Review of the Historic Research Questions and Analysis of the Data Collections

by
Susan A. Lebo

Chapter 8 reviews the research questions which structured the Lewisville Lake investigations, analyzes the data collected to address these questions, and provides an overview of the lake area. The review summarizes the type of data collected and data limitations for each question. The analysis evaluates the data results generated for each question.

## Research Questions

The research questions identified in the Ray Roberts Lake - Lewisville Lake Research Design were developed before the survey phase (Ferring and Lebo 1988). The research design, research questions, and data collection methods are summarized in Chapter 4. The questions are listed here to aid the reader.

Q1. *The distance to source areas for goods and services for families in the Lewisville Lake project area is reflected in the distribution (i.e., dispersal or compactness) of settlements.*

Q2. *The distance to source areas for goods and services differed among areas within northcentral Texas before 1870, and this variability is reflected in the establishment of industrial sites (e.g., sawmills, pottery kilns), site dispersal, and artifact diversity. Sites located near major sources, such as pottery kilns, reflect lower artifact diversity for those resources than sites located farther from source areas.*

Q3. *Variability in the artifact and architecture assemblages from farmsteads in the Lewisville Lake area will reflect differences in site size, complexity, socioeconomic status, ethnic affiliation, date of initial occupation, length of occupation, and the rate of occupation turnover. Diachrony in the interaction of these factors and farmstead assemblages can be quantitatively measured.*

Q4. *The distribution of farmsteads in the Lewisville Lake area reflects the productivity of the local environment, including market demands. Major environmental factors that affected the location of early farmsteads, industries, and settlements include soil type, topography, availability of water, and vegetation. During later periods, environmental factors such as the loss of soil productivity, boll weevil infestations, and droughts affected the survival potential of farmsteads.*

Q5. *Site function and/or activity areas will be reflected in the artifact assemblage and architecture of domestic and industrial sites.*

Q6. *The introduction, assimilation, dispersal, and duration of different architectural styles and technologies identified on the rural landscape at Lewisville Lake reflects sociocultural, economic, and political factors and changes.*

Q7. *Access to goods and services (economic variables) is the most important factor affecting the material record. This factor is less important at early sites where access is limited regardless of economic status. However, as geographical and cultural barriers are reduced, variability between sites will reflect economic access and not cultural heritage. In other words, the assemblages at early sites will reflect many of the artifact and architecture styles and technologies brought by new immigrants. Later, these styles and technologies will be replaced by goods and services produced locally or regionally, and differences between sites will reflect differential access to these products and not differences in cultural heritage.*

Q8. *Cultural stratigraphy occur in the material remains at farmsteads in the project area. Statistically similar material culture patterns will occur at sites of similar age occupied by only one family. Greater diversity will be evident for serially occupied sites, or sites occupied for longer periods.*

## Research Question Review

The review summarizes the type of data collected and data limitations for each research question. Archival research and archaeological investigations were conducted to obtain information for answering each question. The type of data generated varied between questions because of data limitations inherent in the data and the collection methods. Closely related or overlapping questions are grouped together to increase clarity and reduce repetition.

### Questions 1, 2, and 7

Two types of data were gathered for answering these questions. First, archival research was undertaken to obtain historical information about the types and distribution of environmental and economic resources and settlement diversity in the lake area. Secondly, archaeological data were collected on the types of sites present in the study area, site content and context, and their distributions.

### Archival Research

The archival research indicates environmental, economic, and settlement diversity. Two environmental zones occur in the lake area. The Blackland Prairie includes the eastern half of the lake, while the Eastern Cross Timbers includes the western half of the lake. The soils, vegetation, and topography differ between these two environmental zones (see Chapter 1). Initial settlement occurred in the Blackland Prairie, and both environmental zones were settled by farmers.

Economic diversity was limited prior to the Civil War. Few wealthy immigrants or slave owners settled in the county. Farming was the primary occupation listed by settlers in the 1850s. Other occupations were listed in the 1860 census

(Chapter 5). These occupations were often conducted seasonally and were primarily service related (Chapter 5). The 1870 census indicates occupational diversity among "in town" or urban dwellers. Rural dwellers remained overwhelmingly farmers and farm laborers.

The archival data indicates low settlement diversity in the lake area prior to the Civil War and the coming of the railroads. Early site types in the lake area were farmsteads and small rural communities, which formed as small clusters of closely related families which settled near each other. The frequency of early farmsteads and settlements was small and their distribution was dispersed. By the early 1850s, almost a dozen small communities were established near Lewisville Lake occurring in both the Blackland Prairie and Eastern Cross Timbers.

Industrial and commercial sites were established early to meet the needs of the settlers. Some were located on farmsteads, while others were established in the new communities. Many dwellings served both domestic and commercial functions. Post offices, schools, churches, and stores often were first established in dwellings, and later, separate commercial or public structures were built. Most often the first buildings in a rural community were several farmsteads, followed by a store, post office, and a school/church. By the 1850s, many small communities in the Lewisville Lake area had one or two stores, a cotton gin, a grist mill, a blacksmith shop, a post office, and a school/church. Communities located along major transportation routes and ample water supplies faired best.

The archival record indicates that the frequency and distribution of farmsteads, rural communities, and urban centers changed considerably in the last 150 years. The distance between early farms was large, being determined by the number of acres granted to immigrant families. As the amount of available land decreased, the distance between farms and farm size decreased. Many rural communities were established during the mid-nineteeth century, but with the coming of the railroads, the numbers and distributions of these communities changed. The railroad ensured the success of some communities and resulted in the death of others. Small towns that grew into urban centers along the railroad include Denton, Lewisville (formerly Holfords Prairie), and Lake Dallas.

Changes in farming practices after the Civil War affected the frequency and distribution of farmsteads, rural communities, and urban centers. During the early period, farmers were largely self-sufficient, growing most of their crops for home consumption. What necessary items they could not produce were purchased from local merchants in the surrounding communities.

With the influx of new immigrants and commercial farming after the Civil War, the distribution of farmsteads and communities changed. The new immigrants were primarily from the Lower South, while earlier settlers were mainly from the Upper South. Cotton, wheat and corn were the major commercial crops grown on farms in the Lewisville Lake area during the late nineteenth and early twentieth centuries. Tenant farming became the primary farming strategy by the 1880s. While the number of farms increased until 1910, farm size decreased. By the Depression, the trend had changed and farm population and farm size had declined. Farmers moved to the urban centers, largely depopulating the rural farms. Rural communities supported by these farmsteads also began to disappear.

As the economy of the lake area changed with the completion of railroad lines, the source and movement of goods and services changed. While prior to the railroads goods and services from other areas were costly and had to be transported overland by freight wagon, they became less costly and easier to acquire after railroads reached the area. Dallas and Fort Worth became major urban centers in the 1870s. Crops and other commodities produced in the Lewisville Lake area could now be shipped to other areas. Cattle drives increased in importance, and new technology changed the availability of many products.

### Archaeological Record

Farmsteads were the most common type of site in the lake area. The number of settlements were small and their distribution was dispersed (see Chapter 5). Farmsteads were well represented in the archaeological record at Lewisville Lake. They were the most common site type found, followed by surface and subsurface domestic artifact scatters. Industrial and public buildings and sites were under-represented. No archaeological evidence of cotton gins, blacksmith shops, grist mills, schools or churches were found in the project area, many have been removed by urban expansion and development, while others were inundated by earlier lake constructions -- i.e., Lake Garza..

Industrial and public sites represent only a small part of the settlement landscape at Lewisville Lake. Their absence in the recovered archaeological data reflects a sampling bias. This bias occurs because over 80% of the lake area was covered by earlier construction projects. No archaeological investigations were conducted during these earlier construction projects.

Highly visible sites such as cemeteries, which are protected by state laws, were identified and moved before being removed by construction activities. Industrial and other public sites such as grist mills, churches, and schools, were not recorded. The underrepresentation of industrial and public sites is also evident when archaeological sites outside the project boundaries are examined. Several historic stoneware potteries, stores, mills, and other industrial sites and structures remain attesting to their dispersed distribution during the nineteenth century.

The archaeological data from the survey phase indicate that the distribution of farmsteads cross cut soil types, drainage areas, and environmental zones. However, almost twice as many farmsteads occur on the Blackland Prairie (n=39) as in the Eastern Cross Timbers (see Lebo and Brown 1990). Sites initially occupied prior to 1880 (n=14) include five in the Eastern Cross Timbers and nine in the Blackland Prairie. This supports the archival data which indicates that the Blackland Prairie was preferred over land in the Eastern Cross Timbers because of its suitability for farming (see Lebo and Brown 1990; Chapter 8 in this volume).

The archaeological data indicate changes in the source of the goods and services used by farmers in the project area after the Civil War. For example, the number of stoneware vessels on these farmsteads produced at Denton County kiln sites decreased while the number from nonlocal kiln sites increased. Stoneware vessels made at kiln sites in the Midwest and other areas of Texas increasingly cut into the market dominated by local wares before rail service reached the area. Bottle glass makers marks also indicate bottles were shipped to the area from cities in the Northeast.

Site content was recorded for all collections (see Brown and Lebo 1990; Lebo and Brown 1990; Chapter 6 in this volume). Information on site size, complexity, content, and context are discussed under questions 3 and 5.

## Summary

The archival and archaeological data do not support all of the implications defined for questions 1, 2, and 7 (see Chapter 7). Others can not be rejected based on the data from Lewisville Lake.

Question 1:

Goods and services prior to the Civil War did not determine the distribution of settlements. Settlement occurred in the Lewisville Lake area although access to goods and services were limited. Settlement was encouraged by the Peters Colony, and the availability of free land brought many settlers to the area. Environmental factors such as soil type, vegetation, topography, and the availability and distribution of available homesteading land were important. Cultural ties were also important. Closely-related families often traveled to Texas and settled near each other. Ethnic groups, particularly from Europe established colonies such as the French settlement of Icarian Settlement or New Icara.

The location of major cities elsewhere in Texas did not determine the selection of the Lewisville Lake area for settlement or the location of early communities in the area. Access to goods and services were limited in the Lewisville Lake area. No major cities were located in northcentral Texas during the early settlement period. Goods not available within the region were imported by river or overland in freight wagons. The types and locations of early industries were determined by local needs.

Question 2:

Local goods and services predominate the lake area before the Civil War, and some continued to dominate until the turn of the century. Some locally produced goods and services were traded for items not locally available (see Chapter 5). The types of products available to merchants varied between settlements in northcentral Texas, as well as the purchasing power of different farmers. However, no discernable disparity in purchasing power was visible in the archaeology of the study sites.

Greater artifact diversities were not found for sites in the lake area located near major industries or communities. The same types of goods and services were utilized by farmers throughout the lake area.

The artifact indices for sites at Lewisville Lake indicate both intra-site and inter-site variability. Some of this variability is the result of sampling. Artifact samples from different features or deposits at a site may be highly variable (see Chapter 6). For example, architectural items are much more frequent in block excavations located under or near collapsed structures than they are in the sheet-refuse deposit. Bottles and ceramics are often more frequent in trash deposits than in sheet-refuse middens.

Inter-site variability in artifact indices occur at several scales of analysis. They occur at the scale of major artifact categories (e.g., refined earthenwares, bottle glass, nails), and at the scale of artifact types within these artifact categories (e.g., shell-edge decorated, undecorated, and sponge-decorated refined earthenwares). Several factors affect the variability which occurs at both scales. These factors include: (1) site age, (2) duration of occupation, (3) socioeconomic status of the occupant(s), and (4) sampling. Other factors include differences in access to specific goods and services. For example, bottle glass sherds generally represent a smaller percentage of the sheet-refuse assemblage at nineteenth-century farmsteads than at twentieth-century farmsteads.

Question 7:

No discernable disparity in purchasing power or artifact and architecture assemblages was visible in the study sites. No plantations, large landowners (over 400 acres), or ethnic enclaves were found. The assemblages from the tenant and small landowning sites were not significantly different.

## Question 3

Archival and archaeological data were collected to address question 3. Archival data were compiled primarily from deed/title records. Archaeological data include information on site size, content, and age. Each of these data collections are discussed separately below.

### Archival Data

Archival data were compiled primarily from deed/title records. This research was undertaken to obtain historical information about the occupants of the mitigation sites. The chain of title was completed for these sites providing information on both the initial and subsequent site occupations. Information on socioeconomic status and ethnic affiliation was not obtained for all sites. Archival data were obtained on site size. This information was also compiled from the deed/title records and includes the total number of acres owned.

### Archaeological Record

Archaeological data were collected on the artifact and architectural assemblages of sites in the lake area. Primary emphasis was placed on sites exhibiting potential eligibility for nomination to the National Register (see Brown and Lebo 1990; Lebo and Brown 1990; Chapter 4 in this volume). The most comprehensive data collections were obtained at the mitigation sites (see Chapter 6). Limited architectural data were collected because none of the testing or mitigation sites had standing architecture.

Site size was calculated by determining the distribution of surface artifacts and features, structural remains (e.g., dwellings, wells, and fence lines), and subsurface deposits. Site complexity was determined by recording the number, type, and distribution of surface and subsurface features, structural remains, and sheet-refuse deposits. These figures are for the "living area." The living area includes the dwelling and support structures (well, cistern, walkways, outdoor cooking areas, washing areas, outbuildings). The orchards and fields are not included in these figures.

Archaeological data were used to calculate mean beginning dates (MBD) for several major artifact categories. These dates are estimates of the initial occupation date for sites in the lake area. The formula and data requirements for calculating MBD are given in Chapter 4. MBD dates were obtained for all historic testing (Brown and Lebo 1990: Chapter 5) and mitigation sites (Chapter 6 in this volume). Gross MBD dates were obtained for the survey collections (see Lebo and Brown 1990). MBD were

calculated for refined earthenwares, stonewares, and bottle glass sherds. The data from these three categories were then combined to produce the "best" estimate of initial occupation.

Based on limited survey data, the living area of historic sites is highly variable. The survey data provide a rough estimate and indicate that the living area of some sites may be over 10,000 square meters (or over 100m x 100m). Most sites probably range between 900 and 2500 square meters. Few sites with intact architectural features (e.g., house mound, cellar, well, fence) occur in this upper range.. Based on survey data, this site is approximately 165 m north-south by 155 m east-west and contains five clusters of structures and surface features. Surface features include architectural remains of two houses, a large barn, several sheds, two wells/cisterns, a windmill, above-ground water tower, a brick walkway, a water trough, and several fencelines.

The most complete data on site size was obtained for the mitigation sites (see Chapter 6). Site size of the living area for the mitigation sites based on the distribution of the sheet-refuse deposits and architectural features was remarkably similar. Site 41DN401 is approximately 40m north-south by 55 m east-west; 41DN404 is 35 m north-south by 60 m east-west; and 41DN429 is 40 m north-south by 50 m east-west. These sites range between 2,000 and 2,200 square meters. The size of the land tract these farms are located on ranged from 43.9 acres to 320 acres (see Chapter 6). Site 41DN401 contained between 200 and 320 acres; 41DN404 was on 90.47 acres; and 41DN429 was on 43.9 acres when it was sold to the Corps of Engineers, but was probably on 133 acres when the property was occupied by G. C. McCurley (see Table 6.12).

Farmstead sites in the Lewisville Lake area ranged from sites with few surface features to sites with numerous features (see Brown and Lebo 1990; Lebo and Brown 1990; Chapter 9 in this volume). Architectural features found at farmstead sites include wells, cisterns, cellars, cellar depressions, house mounds, piers and other debris from houses, chimneys, and outbuildings, fences, corrals, windmills, above-ground water towers, and garages. Brick scatters, chimney falls, artifact scatters, and trash dumps occur as surface features at some sites. Buried features include old two-tract dirt roads, kitchen and/or trash-related dumps, buried wells and cellars.

The testing and mitigation data indicate considerable architectural variability between sites. Some of this variability may correlate with the initial date of occupation and duration of occupation. Early historic components that were occupied for 40 years or less are poorly represented. These sites (e.g., 41DN392, 41DN410) occur as surface artifact scatters with no evidence of structures or buried features. Sites dating after 1870 are better represented and include a number with architectural features. For example, while no cellar or shed/barn was found at 41DN404, a brick scatter from the dwelling chimney and two buried kitchen-related features occur. Cellars, house mounds, and brick scatters from collapsed chimneys occur at both 41DN401 and 41DN429. The cellars at these sites date near the end of occupation. A well, windmill, and fencelines occur at 41DN401 and an outbuilding mound occurs at 41DN429.

The types and frequencies of major artifact categories among the mitigation sites are very similar (see Chapter 6). Variability occurs between different parts of the sheet-refuse deposit, as well as between the sheet refuse and major features (e.g., trash pits, house fall).

The sheet-refuse deposits at these farmsteads include artifacts and architectural remains from several occupations. Each of these sites were occupied for over 50 years by at least several families. Site 41DN429 was occupied primarily by the McCurley family, while a number of tenants may have lived at 41DN401 (see Chapter 6). These deposits were shallow and material from these multiple occupations were mixed.

### Summary

The archival and archaeological data were insufficient to address the implications defined for question 3. Over 80% of the reservoir was completed before this project began. Our project was limited to the area between the extant shoreline and the proposed 10-foot conservation pool rise (from 515 to 522-ft AMSL). As a result, the range of variability that occurred historically in the Lewisville Lake area could not be measured in our project area.

No data were obtained indicating whether or not socioeconomic status or ethnic affiliation were correlated with site size, site complexity, or occupation turnover. The data for 41DN429, occupied by several generations of the McCurley family, are not significantly different than the data obtained for other sites in the reservoir. No conclusive data were obtained correlating the initial date of occupation or length of occupation with site size or complexity. However, several general trends are suggested.

Two general trends are suggested by the Lewisville Lake data. First, site size and complexity are low for early sites that were occupied for only a short period. These sites, which are poorly represented, contain low-density deposits and few features. Secondly, sites occupied for long periods (over 60 years) generally contained more features, particularly if they were occupied until the early to mid-1900s. Thirdly, the artifact categories found at early sites versus late sites, or at sites occupied for short periods versus long periods, did not appear to differ significantly. Temporal differences occur between the artifact types in the major artifact categories, but not in the types of artifacts. For example, shell-edge decorated refined earthenwares occur on early sites occupied before 1870, but not on sites initially occupied later. However, the relative frequency of refined earthenwares at early sites may not be significantly different from frequencies for later sites.

## Question 4

Two types of data were gathered for answering this question. First, archival research was undertaken to obtain historical information about the types and distribution of environmental and economic resources and farmsteads and communities in the lake area. Secondly, archaeological data were collected on the types and distribution of farmsteads in the project area. The data collected for questions 1 and 2 were used for this question.

### Archival Research

The archival research pertinent to answering this question is summarized under question 1 and is not repeated here.

### Archaeological Record

The distribution of farmsteads is given in Lebo and Brown (1990). The number of settlements were small and their distribution was dispersed (see Chapter 5).

### Summary

The data for addressing this question is summarized in the discussion for question 1. This question can not be rejected based on the archival information, which indicates that environmental variables were important considerations in where immigrants settled and in landuse patterns. However, as the amount of available land decreased, these factors became less important. They also were important, albeit not the only factors, affecting the survival potential of farmsteads in the lake area.

## Question 5

Both archvial and archaeological research were conducted to address question 5. Emphasis was on archaeological data.

### Archival Research

The archival research emphasized the deed/title records. This research is detailed in the above questions and is not repeated here.

### Archaeological Record

The archaeological research emphasized data recovery pertaining to site context and content. These data were recorded for all historic components found during survey. Based on context data, isolated finds, surface scatters, and farmsteads were identified. Isolated finds were surface deposits of isolated artifacts that were no longer *in situ* and lacked integrity. Surface scatters contain few to numerous surface artifacts, but no subsurface deposits. Farmsteads contain intact subsurface features and artifacts, and may or may not contain surface scatters or features.

By examining the types of artifacts and architectural remains that occur at a site, and the relative frequency of the different types of remains, domestic and industrial sites were identified.

The artifacts and architecture at domestic sites contain remains associated with domestic activities. These remains may include structures (e.g., dwelling, well, cellar, chicken coops, barns, sheds) artifacts (e.g., ceramic and glass food containers and dishes, household items, children's toys, farm implements), and features (e.g., cooking area, hog-butchering area, garden, orchard, fields).

The artifacts and architecture at industrial sites contain remains associated with industrial/commercial activities, including boilers, engines, grinding/milling stones, kilns, slag piles, or blacksmithing hardware and debris, and so on. Few domestic-related artifacts or structures occur at these sites. Both domestic and industrial activities were sometimes carried out at the same site. For example, blacksmithing was often done on a part-time basis as part of the farm activities at rural farmsteads. However, the ratio of domestic artifacts and architecture to industrial remains is greater at predominantly domestic sites, while the reverse occurs at primarily industrial sites.

Isolated finds, surface scatters, and farmsteads were found in the project area (see Lebo and Brown 1990). Domestic artifacts dominated at each of these components. No domestic/industrial or industrial sites were found.

### Summary

This question cannot be rejected. No industrial sites were found in the project area allowing comparisons to be made between domestic and industrial sites.

## Question 6

Two types of data were collected to address question 6: (1) archival data, and (2) architectural data. Archival data provided information on the cultural heritage and ethnicity of the Lewisville Lake settlers. Architectural data were obtained from archival sources and the archaeological deposits at sites in the lake area. However, limited archaeological data were found. No sites had extant architecture dating to the settlement periods.

### Archival Data

The archival data provided information on the cultural heritage and ethnicity of the Lewisville Lake settlers. These data were used to summarize the social, economic, and political history of the area (see Chapter 5). Archival data on the architecture of the lake area was not actively researched because no standing architecture existed in the project area.Published data is provided by Jordan (1977).

### Architectural Data

Limited architectural data were found in the archaeological deposits at Lewisville Lake. No sites had extant architecture dating to the settlement periods. Standing structures were predominantly post-1930.

Surface and subsurface architectural remains (e.g., brick scatters, building piers, window glass sherds, nails) were found at many farmsteads during survey, testing, and mitigation. Archaeological data from these sites indicate changes in the types of building materials used. Handmade bricks and machine-cut nails predominate at sites initially occupied during the nineteenth century. Twentieth century buildings are made with primarily wire nails and machine-made bricks. Many of the buildings have concrete piers or foundations. Early dwellings were largely log construction, although more wealthy families may have frame houses built with lumber hauled from East Texas. Outbuildings during both periods may have been log, while most during the twentieth century were probably plank.

### Summary

This question can be addressed only at a general level because no standing architecture existed. Archaeological data provides information on gross trends (cut to wire nails, handmade brick to machine-made brick), but no substantive data on changes in the distribution and types of building styles at Lewisville Lake. Further, no data were obtained on different

building styles associated with major ethnic groups, the rate of assimilation, or the mixing of building styles. None of the types of structures recorded in the project area had distributions that correlated with specific ethnic groups (e.g., the distribution of wells and cellars).

### Question 7

See discussion under question 1.

### Question 8

Archival and archaeological data were collected to identify site type, age of occupation, length of occupation, site contents, and spatial distributions. These variables are discussed in detail in questions 1-7 above, excluding spatial distributions. Spatial distribution information was recorded for all survey, testing, and mitigation sites. Detailed spatial data of excavated deposits and architectural features occur for all testing sites (see Brown and Lebo 1990) and mitigation sites (see Chapter 6 in this volume).

The spatial data for the testing and mitigation sites indicate that sheet-refuse deposits are shallow in the study sites. Sheet-refuse occurs on the surface at many sites extending an average of 10 to 20cm below surface. Buried undisturbed features include wells, collapsed cellars, and house fall (e.g., house mounds, chimney scatters, fireboxes). Culturally-stratified features excavated at study sites include several kitchen or trash-related deposits at 41DN404.

#### Archival Data

The archival data for the testing and mitigation sites provided information on site type, age of occupation, length of occupation, and serial occupations. These data are in Brown and Lebo (1990) and Chapter 6 in this volume.

#### Archaeological Data

As mentioned above, detailed spatial data of excavated deposits and architectural features were recorded for the testing and mitigation sites. Emphasis was on sheet-refuse deposits, structural features (i.e., dwellings and outbuildings), and culturally-stratified features. No wells, cellars, cellar depressions, or modern trash dumps were excavated.

#### Summary

The study results were limited by preservation bias. Few early sites remained and these were primarily surface scatters. Early sites with buried deposits did not have *in situ* features, lacked integrity, often visible as low-density beach deposits, and lacked architectural integrity. As a result, relative little data were collected from these sites. However, these sites are similar in content and context with other early sites in Northcentral Texas (Lebo 1989).

Artifact data from these early sites, particularly if they are occupied for only a short period, contain stylistic and functional artifact classes less frequently found or are absent on more recent sites. For example, shell-edge-decorated refined earthenwares occur on early sites, but not on sites initially occupied after 1870.

No early farmsteads occupied and abandoned before 1900 were found. Evidence of the initial date of occupation, length of occupation (indicating serial occupation), and additions or modifications of buildings occur in the artifact and architecture from the three mitigation sites (see Chapters 9 and 10). Greater artifact diversity occurs in the sites serially occupied by several generations of the same family or by several unrelated families.

### Summary

The research questions which structured the Ray Roberts Lake - Lewisville Lake investigations were reviewed and the data collected to address these questions were analyzed. The review summarized the type of data collected and data limitations for each question. The analysis evaluated the data results generated for each question.

The research questions, which structured these Lake Lewisville investigations, could not be fully addressed because of data limitations. These limitations occurred because over 80% of the lake area was impacted by construction, urban encroachment, or was underwater. Site frequency, content, and integrity data were adversely affected, reducing the data base and the potential for reservoir-level temporal and spatial comparisons.

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# APPENDIX A:
# INVENTORY OF IDENTIFIED VERTEBRATE REMAINS FROM HISTORIC SITES

The following identifications and quantifications were performed by LeeAnna Schniebs of the Zooarchaeology Lab at UNT during the course of the Lake Ray Roberts/Lewisville Archaeology Project. Faunal remains were identified to the lowest taxonomic category possible if skeletal element could be determined. Individual fish scales, vertebrae, and eggshell fragments were counted separately and are included in the computation of Total Bone from each site. Counts include material recovered during testing excavations, as well as from later investigations conducted during the mitigation phase of the project.

Provenience of each specimen is presented as "u." for unit, followed by the letter or number assigned to the unit, then (/) and "lv." for the level from which the specimen was excavated. Comments are enclosed by parentheses to note portion or additonal details of each element, its completeness, and/or condition (e.g., burned, cut). A key to abbreviations follows this inventory.

**41DN401**
Total Bone = 868,
ID = 227 (26%) (12B)
unid = 641 (86B)

Inventory:
Gar (Lepisosteus sp.) - vertebra (centrum) u.H/lv.1
Catfish (Ictaluridae) - cleithrum (L) u.M/lv.2
Carp (Cyprinus carpio) - cranium (frag., charred) 3@ u.D/lv.1
White crappie (Pomoxis annularis) - cranium (L maxillary) u.L/lv.1
Fish, indeterminate - vertebra (dia. = 6.59mm) u.I/lv.1; (dia.= 6.12mm) 3@ u.L/lv.1
Box turtle (Terrapene sp.) -
    carapace (peripheral frag.) u.I/lv.2
    plastron (hyoplastron and xiphiplastron frags.) u.G/lv.2
Turtle, indeterminate -
    carapace (peripheral frag., charred) u.23/lv.1
    plastron (frag.) u.K/lv.2
    shell (frags.) u.C/lv.1
Chicken (Gallus gallus) -
    coracoid (R prox. frags.) u.J./lv.1, u.M/lv.2
    humerus (R) u.39/lv.4
    radius (R prox.) u.M/lv.2
    femur (R shaft) u.O/lv.2
Mallard (Anas platyrhynchos) - cranium (calvarium, charred) u.N/lv.2
Bird, large -
    rib (frag.) u.9/lv.1
    femur (R dist.) u.B/lv.1
Bird, medium -
    eggshells 4@ u.27/lv.6
    humerus (L dist. frag.) u.G/lv.2
    tarsometatarsus (L prox.) u.37/lv.3
    phalanx I (R) u.M/lv.1
    phalanx (charred) u.G/lv.1
Opossum (Didelphis virginianus) -
    cranium (occipital condyles) u.G/lv.2
    maxilla (R M2, M3 and M4) u.F/lv.1; (R M1, M3 and M4) u.G/lv.1;
    tooth (max. incisor) u.I/lv.2; (canine frag.) u.I/lv.1
    vertebra (thoracic) u.N/lv.2; (axis) u.O/lv.1
    humerus (R prox. frag.) u.M/lv.2; (L) u.M/lv.2
    scapula (L) u.M/lv.1
    ischium (frag.) u.G/lv.2
Cottontail (Sylvilagus floridanus) -
    maxilla (R, jugal w/alveolus) u.O/lv.2
    mandible (R) u.R/lv.1; (R P3+ P4, charred) u.H/lv.1; (R incisor, P3, P4) u.J/lv.1
    cranium (L petrous, charred) u.I/lv.2
    vertebra (lumbar) u.B/lv.1, u.G/lv.2; 2@ u.L/lv.1; (frag.) u.M/lv.2
    innominate (L) u.F/lv.1; (L) u.H/lv.1; (R + L ischium frags.) u.E/lv.2; (acetabulum) u.M/lv.2
    humerus (L unfused prox.) u.27/lv.7; (L dist.) u.R/lv.1

femur (L unfused prox.) u.I/lv.1; (R prox.) u.L/lv.1; (R unfused dist. shaft) u.20/lv.1
tibia (R prox.) u.L/lv.1; (prox. frag.) u.F/lv.1; (R unfused dist.) u.K/lv.2
calcaneum (L) u.35/lv.2

Jackrabbit (Lepus californicus) -
humerus (R dist.) u.G/lv.1
metatarsal II (L) u.M/lv.2

Fox squirrel (Sciurus niger) -
mandible (L mand. incisor + M1) u.G/lv.1
tooth (L max. incisors) u.G/lv.2, u.J/lv.1; (R max. incisor) u.M/lv.1; (incisor frag.) u.H/lv.1
vertebra (atlas) u.I/lv.2
radius (R) u.1/lv.1

Cottonrat (Sigmodon hispidus) -
mandible (R M1 + M2) u.27/lv.4; (L M1, M2 + M3) u.28/lv.1

Rodent, indeterminate -
tibia (R fibula remnant) u.J/lv.1
femur (L prox.) u.G/lv.1

Skunk (cf. Mephitis mephitis) - humerus (L dist.) u.D/lv.1

Raccoon (Procyon lotor) - mandible (ramus frag.) u.9/lv.1

Carnivore, indeterminate - tooth (frag.) u.D/lv.1

Pig (Sus scrofa) -
cranium (auditory bulla) u.E/lv.1
maxilla (R p4, M1, M2) u.G/lv.2; (L M2, charred) u.K/lv.2
mandible (R M2 + M3) surface; (R p4, M1) u.G/lv.2; (ramus frags.) 2@ u.G/lv.2
tooth (R decid. mand. p4) u.H/lv.1; (L max. M1) u.I/lv.1; (L mand P2) u.B/lv.1; (canine frag.) u.7/lv.1, u.B/lv.1, u.H/lv.1; (L mand.incisor) u.13/lv.2, u.G/lv.2; (incisor frag.) u.B/lv.1, u.J/lv.1, u.L/lv.1; (enamel frags.) u.15/lv.1, 2@ u.14/lv.2, u.16/lv.2, u.27/lv.4, u.B/lv.1, u.C/lv.1, u.E/lv.1, u.E/lv.2, 2@ u.F/lv.1, u.I/lv. 1, u.I/lv.2; (charred frags. in sockets) u.30/lv.2
vertebra (atlas frag.) u.H/lv.1
astragalus (R frag.) u.G/lv.2
metapodial (prox. frag.) u.F/lv.1
phalanx II (L, charred) u.12/lv.2
phalanx (frag.) u.A/lv.1

Horse (Equus caballus) - phalanx III (R) u.26/lv.2

Cattle (Bos taurus) -
tooth (enamel frag.) u.N/lv.2
humerus (R dist. medial) u.C/lv.1
astragalus (R) u.16/lv.2; (R frag.) u.C/lv.1
metapodial (prox. frag., charred) u.D/lv.1

Deer, white-tailed ? (cf. Odocoileus virginianus) -
tooth (enamel frags.) 2@ u.28/lv.1
carpal (L lunate) u.29/lv.3; (R lunate) u.C/lv.1

Mammal, large -
cranium (alveolus frag.) u.16/lv.2, 2@ u.G/lv.1, 3@ u.I/lv.1; (alveolus frag. w/saw cut) u.J/lv.1; (petrous frag.) u.14/lv.1; (calvarium frags.) 3@ u.G/lv.2
tooth (enamel frag.) 2@ u.21/lv.2, u.C/lv.12@ u.I/lv.1
vertebra (lumbar, unfused centrum frag., cut) u.5/lv.2; (lumbar, charred frag.) u.39/lv.4; (lumbar, frag.) u.R/lv.1; (thoracic, dorsal spine) u.R/lv.1; (frags.) u.14/lv.2, 2@ u.J/lv.1
rib (frag., cut) u.16/lv.1, u.M/lv.1; (shaft frags.) 2@ u.D/lv.1
scapula (frag. w/saw cut) u.35/lv.4
long bone shaft (charred w/saw cuts) u.12/lv.1; (frag., charred w/saw cut) u.24/lv.1, u.35/lv.2; (saw cut frag.) u.35/lv.1, 7@ u.A/lv.1, 2@ u.B/lv.1, u.C/lv.1, 3@ u.D/lv.1, 2@ u.F/lv.1, u.G/lv.1, u.I/lv.1, 6@ u.I/lv.2, 2@ u.J/lv.1, u.K/lv.1; 12@ u.M/lv.1, 11@ u.M/lv.2, u.O/lv.2; (frag. w/cut mark) u.A/lv.1
astragalus (frag.) u.33/lv.2
phalanx II (unfused prox. epiphysis) u.6/lv.3
phalanx (frag.) u.17/lv.2

Mammal, medium -
cranium (petrous frag.) u.27/lv.3; (alveolus frag.) u.I/lv.2; (frag.) u.G/lv.1
tooth (canine frag.) u.16/lv.2; (root only) u.30/lv.2; (frag.) u.J/lv.1
vertebra (centrum frag.) u.L/lv.1

Mammal, small -
rib (frag.) u.K/lv.1
illium (R, frag. w/acetabulum) u.E/lv.2

**41DN404**
Total Bone = 1601,
ID = 404 (25%) (12 B) (fine = 150, coarse = 46, flot. = 208)
unid = 1197 (345 B) (fine = 1054, coarse = 45, flot. = 98)

Inventory:
Gar (Lepisosteus sp.) - scales 5@ u.23/lv.1; u.K/lv.1
Catfish (Ictaluridae) -
spines (R + L pectorals, burned white) 2@ u.F/Fea.2
Smallmouth buffalo (Ictiobus bubalus) - axonost u.10/lv.1
Crappie (cf. Pomoxis annularis) -
premaxilla (R) u.G/lv.1
operculum (R) u.E/lv.1
Bass/Sunfish (Centrarchidae) -
opercula (2R+1L) u.G/lv.1
cleithrum (L) u.G/lv.1
Fish, indeterminate -
skull (frags.) u.6/lv.1; u.E/lv.1; 2@ u.G/lv.1; u.H/lv.1; u.F/Fea.2
vertebra (dia.= 9.04mm) u.B/lv.1
vertebrae (frags.) 7@ u.G/lv.1; 22(some burned)@ u.F/Fea.2
spine (frags.) u.B/lv.1; u.32/lv.2; (lepidotrich, burned) u.F/Fea.2
scales 110@ u.13/lv3; 25@ u.F/Fea.2; 3@ u.G/lv.1
Softshell turtle (Trionyx sp.) - pleural u.E/lv.1
Musk/Mud turtle (Kinosternidae) - femur (R) u.D/lv.1
Slider (cf. Trachemys sp.) - peripheral u.D/lv.1
Snake, indeterminate - ribs, (prox. frags.) 2@ u.F/Fea.2
Chicken (Gallus gallus) -
corocoid (R) u.F/Fea.2
tibiotarsus (R prox., cut mark) u.F/Fea.2
Bird, medium -
radius (L) u.36/lv.3; (L) 2@ u.F/Fea.2
scapula (L) u.F/Fea.2
sacrum (frag.) u.36/lv.2
phalanges 2@ u.F/Fea.2
eggshell (frags.) 89@ u.13/lv.3, 2@ u.F/lv.2/Fea.2, 15(some burned)@ u.F/lv.3/Fea.2, 37@ u.F/Fea.2
Bird, small - long bone shafts (burned) 2@ u.F/Fea.2
Opossum (Didelphis virginianus) - femur (R) u.9/lv.2
Cottontail (Sylvilagus floridanus) -
mandible (L) u.A/lv.1
tooth (R max. incisor + frags.) u.F/lv.3/Fea.2
humerus (R prox.) u.36/lv.3
humerus (R dist.) u.36/lv.2
femur (L prox.) u.K/lv.1
femur (condyle frag.,burned white) u.F/Fea.2
tibiofibula (L) u.K/lv.1
Cottonrat (Sigmodon hispidus) -
mandible (L w/M1+M2) u.F/lv.2/Fea.2
tooth (L mand. M1 + misc.frags.) u.F/lv.2/Fea.2
Rodent, indeterminate -
vertebra (caudal) u.13/lv.3
misc. frags. 7@ u.F/lv.3/Fea.2
Raccoon (Procyon lotor) - tibia (L prox.) u.35/lv.2
Pig (Sus scrofa) -
tooth (enamel frags.) 2@ u.G/lv.1, u.A/lv.1
tooth (L max. M2 + 2 mand. incisors) u.F/Fea.2
phalanx (frag.) u.F/lv.2/Fea.2
phalanx III (L) u.F/lv.2/Fea.2
Horse (Equus caballus) - phalanx III (frag.) u.F/lv.1
Mammal,large -

tooth (enamel frag.) u.13/lv.3
long bone shafts (saw marks) u.A/lv.1, u.D/lv.1, u.F/Fea.2
vertebra (frags.) 2@ u.36/lv.3, u.A/lv.1
vertebra (transv. proc. w/cut marks) u.13/lv.2
bone wall frag. (burned w/saw marks) u.F/lv.2/Fea.2
Mammal, medium -
illium (R frag.) u.L/lv.1
vertebrae (2 unfused epiphyses, burned white) u.F/lv.3/Fea.2
Mammal, small -
incisor (frags.) u.F/Fea.2
femur (L prox. frag.) u.A/lv.1
phalanx (burned white) u.F/lv.2/Fea.2
phalanges (misc. frags.) u.F/Fea.2

**41DN429**
Total bone = 116,
ID = 44 (38%) (20 B)
unid = 72 (55 UB + 17 B)

Inventory:
Carp (Cyprinus carpio) - spine (pectoral) u.16/lv.2
Fish - vertebrae (dia.= 6.54mm) 2@ u.28/lv.2
Chicken (Gallus gallus) -
scapula (L) u.21/lv.2
humerus (L) u.51/lv.1
carpometacarpus (R dist.) u.23/lv.1
Opossum (Didelphis virginianus) - humerus (L) u.41/lv.1
Fox squirrel (Sciurus niger) -
incisor (R max.) u.17/lv.3
humerus (L, charred) u.14/lv.3
tibia (R prox.) u.55/lv.2
Norway rat (Rattus norvegicus) -
innominate (L) u.44/lv.2
illium (R frag.) u.51/lv.1
femur (L) u.51/lv.1
Cotton rat (Sigmodon hispidus) - innominate (L) u.54/lv.1
Pig (Sus scrofa) -
tooth (enamel frag., charred) u.54/lv.1
scapula (R frag., charred) u.20/lv.4;
(frag., cut mark) u.18/lv.2
humerus (shaft frag. w/saw cut) u.18/lv.3
rib (prox. frag.) u.17/lv.2
phalanx I (frag.) u.54/lv.1
metatarsal II (L) u.54/lv.1
femur (shaft frag.) u.54/lv.1
Cattle (Bos taurus) -
rib (shaft w/saw cut) surface
ulna (L frag.) u.25/lv.1
astragalus (L) u.45/lv.2
Mammal, large
vertebra (thoracic dorsal spine, charred) u.14/lv.3
vertebra (frag.) u.18/lv.4
vertebra (frag. w/saw marks) u.15/lv.3; (frag., charred w/cut mark) u.14/lv.3
rib (prox. frag. w/saw marks) u.25/lv.1
rib (prox. frag. charred) u.51/lv.1
rib (frag.) u.20/lv.2
long bone shafts (frags. w/saw marks) u.15/lv.3, 2@ u.20/lv.2; (frag. w/slight cut) u.20/lv.3
long bone shafts (charred w/saw marks) u.18/lv.3, u.53/lv.1 2@ 19/lv.3

**Key to abbreviations:**

dia. = diameter, maximum width of fish vertebra
dist. = distal portion of element
frag. = fragment
L = left side
M = molar
mand. = mandibular dentition
max. = maxillary dentition
misc. = miscellaneous (e.g., parts of entire skeleton)
P = premolar
prox. = proximal portion of element
R = right side
trans. proc. = transverse process of vertebra
w/ = with

# APPENDIX B:
# HISTORIC ARTIFACT CLASSIFICATION

## 1 - Ceramics

**Subclass:**

1. Coarse earthenwares
2. Semicoarse yellowwares
3. Refined earthenwares
4. Stonewares
5. Porcelains

**Type:**

Coarse Earthenware:

1. Buffware (flowerpots)
2. Bennington type
3. Terra-cotta (flowerpots)
4. Tin enamel (Faience)
5. Traditional redware

Semi-Coarse Yellowware:

1. Plain or clear glazed; unmolded
2. Plain or clear glazed; molded
3. Bennington type/Rockingham type

Refined Earthenware:

1. Dark creamware
2. Light creamware
3. Pearlware
4. Transitional pearlware/early whiteware (1820-1870)
5. Ironstone whiteware (1840-1910) [high fired, vitrified white ironstone]
6. Flow blue (1840-1870)
7 Bluish tinted high fired ironstone (1850-1910)
8. Bluish tinted, non-vitrified ironstone (1850-1910)
9. Pure white whiteware (1890-1989)
10. Imitation flow blue (1890-1925)
11. Light ivory tinted whiteware (1920-1989)
12. Dark ivory tinted whiteware (1930-1989)
13. Very light blue tinted whiteware (1880-1930)
14. Fiesta [colored] glazed whiteware (1930-1960)
15. Unknown
16. Semi-porcelain
17. Colored paste (e.g., pink paste)

Stoneware:

1. Unglazed interior/unglazed exterior
2. Unglazed interior/salt glazed exterior (1850-1875)
3. Unglazed interior/natural clay slip exterior (1850-1875)
4. Salt glazed interior/salt glazed exterior
5. Natural clay slip interior/natural clay slip exterior (1875-1900)
6. Natural clay slip interior/salt glazed exterior (1865-1900)
8. Alkaline glazed interior/alkaline glazed exterior (1840-1900)
9. Natural clay slip/interior/alkaline glazed exterior
10. Natural clay slip interior/bristol glazed exterior (1890-1915)
11. Bristol glazed interior/bristol glazed exterior (1900-1989)
12. Bristol glazed interior/bristol and cobalt blue exterior (1915-1989)
13. Two tone with natural clay slip interior/natural clay slip and salt glazed exterior (1890-1900)
14. Two tone with natural clay slip interior/natural clay slip and bristol glazed exterior (1890-1915)
15. European salt glaze with brown salt glazed exterior (1820-1920)
16. Unglazed interior/no exterior present
17. Natural clay slipped interior/no exterior present
18. Alkaline glazed interior/no exterior present
19. Bristol glazed interior/no exterior present
20. Unknown
21. Salt glazed interior/no exterior present
22. No interior present/unglazed exterior
23. No interior present/natural clay slipped exterior
24. No interior present/alkaline glazed exterior
25. No interior present/bristol glazes exterior
26. No interior present/salt glazes exterior
27. British ale bottle with bristol interior and two tone exterior
28. Bristol interior/unglazed exterior
29. No interior present/no exterior present
30. No interior present/bristol glazed exterior with cobalt blue
31. Bristol interior/natural clay slipped exterior
32. Alkaline interior/salt glaze exterior
33. Salt glaze interior/natural clay slipped exterior
34. Bristol and cobalt blue interior and exterior (1915-1989)

Porcelains:

1. All porcelains [do not separate by paste color]

**Decoration:**

1. None [leave blank]
2. Thin hand painted band
3. Hand painted motif
4. Spatter or sponge
5. Stencil
6. Transfer print
7. Floral decalcomania (1895-1950)
8. Geometric decalcomania (1940-1989)
9. Luster
10. Scalloped
11. Molded polygon
12. Relief molding
13. Annular or banded
14. Mocha
15. Gilding (1890-1989)
16. Colored glaze or wash (Fiestaware; 1930-1960)
17. Finger painting
18. Applique
19. Shell edge
20. Incising/rouletting
26. Slip or glaze on interior
27. Slip or glaze on exterior
28. Thick applied slip banding
29. Sponge or spatter (e.g., Bennington)
30. Hand painted
31. Stencil
32. Relief molding
33. Cobalt blue mocha type swirls on yellowware (1860-1900)
34. Folk Americana painting (e.g., use of household or art paint to paint over glazed surface)
35. Incising (e.g., incised lines or bands on stonewares)
36. Stamped (impressed maker's mark number)
37. Annular or banded ware

**Color of Decoration:**

1. None [leave blank]
2. Polychrome [include faded decalcomania]
3. Light blue
4. Blue
5. Dark blue
6. Pink
10. Red
11. Light green
12. Green
13. Blue green
14. Dark, forest green
15. Black
16. Light yellow
17. Bright yellow
18. Gold
19. Silver
20. Cobalt blue
21. White
22. Orange
23. Chartreuse green
24. Tan
25. Brown
26. Gray

**Maker's Mark:**

1. Impressed mark present
2. Stenciled mark present
3. Impressed mark and a stenciled mark are present

**Sherd Type:**

1. Body
2. Rim
3. Base (no foot ring; include all flat refined earthenware sherds and all stoneware bases in this category)
4. Base with foot ring present
5. Handle
6. Finial
7. Rim with handle
8. Body with handle
9. Lid
10. Spout
11. Lip/rim
12. [not used]
13. [not used]
14. Whole vessel
15. Unknown

## 2 - Bottle Glass

**Color:**

Clear, White:

1. Clear (1880-1989)
2. Clear with gray ash tint (1915-1989)
3. Vaseline colored milk glass (often inset caps; 1870-1930)
4. Translucent white milk glass (1870-1930)
5. Opaque white milk glass
6. Opaque white milk glass with painted exterior (ca. 1920-1950)
31. Clear with opaque milk glass (flashed glass)
32. Frosted

Pink, Manganese, Purple:

7. Manganese decolorized (1880-1920)
8. Pink (depression/most probably tableglass; 1920-1950)
9. Purple

Green, Blue:

10. Dark green to black olive (1700s to 1900)
11. Medium olive green
12. Light olive green
13. Emerald or bright green (for bottles only; soda 1930-1989)
14. Light green
15. Green milk glass (1920-1950)
16. Aqua (light and dark)
17. Crystal blue
18. Dark blue or cobalt; blue
19. Blue milk glass

Brown, Amber, Yellow:

20. Brown, amber
21. Yellow (1916-1930)
22. Straw

Other:

23. Red
24. Black
25. Flash (clear glass dipped and coated with a second color)
26. Carnival (multicolored)

**Sherd Type:**

1. Whole vessel
2. Lip/rim
3. Neck/shoulder
4. Body
5. Base
6. Handle
7. Fruit jar inset cap
8. Fruit jar cover (i.e., lightening bail)
9. Glass stopper for bottle/jar
10. Seal for wine bottle
11. Lip/rim with handle
12. Non-fruit jar inset cap (e.g., milk bottle)
13. Non-fruit jar glass lid (e.g., milk bottle)
14. Lid/cover

**First Diagnostic**

1. None

Pontils:

2. Negative scar (1600-1880)
3. Solid glass rod or glass tip (1600-1880)
4. Ring or hollow shaft (1820-1890)
5. Fire polished (1840-1890)
6. Graphite tipped pontil (1870-1885)
7. Bare iron pontil nipple (1845-1875)
8. Pushup/kickup
9. Improved pontil or pushup
10. Pontil, type unknown (-1890)

Mold seams and bases:

11. Snap case (1850-1900)
12. Post bottom plate mold (1820-1890)
13. Bottom hinge mold (1820-1880)
14. Cup bottom mold (1850-1900)
15. Large Owens ring (1910-1989)
16. Small valve mark (1930-1945)
17. Ground base
18. Stippling on or near base (1940-1989)
19. Machine made (if valve mark or Owens ring is present use those dates; 1910-1989)
20. Handmade bottle (often to fragmentary to further identify; 1850-1910)
21. Semi-automatic (not a "true" machine-made bottle; 1890-1905)
22. Combination post-bottom plate and cup bottom mold (1850-1890)

Lip, Neck, shoulder:

23. Machine made lip/neck/shoulder (1910-1989)
24. Minimally or non-tooled applied string rim (1600-1810)
25. Finely tooled applied string rim (1790-1860)
26. Applied string rim with folded lip (1800-1850)
27. Crudely tooled lip finish with no string applied lip (1840-1860)
28. Ground lip (1850-1904)
29. Applied lip with twisted neck (1810-1880)
30. Non-applied turn molded lip finish (i.e., twisted neck; 1880-1910)
31. Unknown (too fragmentary to identify)

Body sherds (include lids):

32. Handmade body sherd (-1910)
33. Machine made (1910-1989; with stippling 1940-1989)

**Second Diagnostic**

Medicinal and Extract Related:

34. Handmade embossed prescription or extract panel bottle (1860-1900)
35. Handmade non-embossed prescription or extract panel bottle (1860-1900)
36. Handmade, embossed or non-embossed, round or oval prescription or extract bottle (1860-1900)
37. Handmade 6 or 8 sided medicinal bottle
38. Machine made graduated (ounces) medicinal bottle
86. Machine made medicine bottle (include varieties of panel, oval, semi-panel; 1910-1989)
87. [not used]
88. [not used]

Fruit Jar Related:

39. Genuine Boyd fruit jar inset cap (1900-1950)
40. Other fruit jar inset cap (1870-1930)
41. Aqua, flint colored continuous threaded fruit jar (1905-1935)
42. Aqua, flint colored lightening bail fruit jar (1882-1942)
43. Aqua, flint colored continuous thread fruit jar with ground lip (1870-1904)
44. Aqua, flint colored lightening bail fruit jar with ground lip (1870-1904)
45. Aqua, flint colored, non-shouldered fruit jar body sherds (1890-1920; shoulder seal sherds 1870-1920)
46. Aqua, flint colored round fruit jar base (1870-1935)
47. Aqua, flint colored square fruit jar base
48. Clear continuous threaded fruit jar (1870-1989)
49. Clear lightening bail fruit jar
50. Clear continuous threaded fruit jar with ground lip
51. Clear lightening bail fruit jar with ground lip
52. Clear round fruit jar base
53. Clear square fruit jar base (1870-1925)
54. Manganese continuous threaded fruit jar (1880-1920)
55. Manganese lightening bail fruit jar
56. Manganese continuous threaded fruit jar with ground lip
57. Manganese lightening bail fruit jar with ground lip
58. Manganese round fruit jar base
59. Manganese square fruit jar base
60. Clear lightening bail glass lid
61. Manganese lightening bail glass lid
62. Aqua or flint lightening bail glass lid
63. Manganese fruit jar with ground lip
64. Inverted dome fruit jar inset cap (1895)
65. Clear fruit jar glass lid (sits inside zinc ring cap)
90. Amber fruit jar
92. Wax seal fruit jar rim/lip
93. Clear fruit jar spring clip closure (1905)
94. Aqua or flint non-standard threaded lip
95. Aqua or flint lid with interior screw threads

Snuff related:

66. Brown snuff bottle with beaded lip (1870-1920)
67. Brown snuff bottle with rounded machine made lip (1920-1989)
68. Brown chamfered cornered snuff bottle base, side or beaded lip (1870-1920)
69. Brown sharp angular snuff bottle base of side (1880-1910)
70. Brown semi-rounded snuff bottle base or side (1890-1989)
71. Brown well rounded snuff bottle base of side (1920-1989)
72. Brown unidentifiable snuff bottle base or side
73. Olive green chamfered cornered snuff bottle base, side or beaded lip
74. Clear interior ribbed snuff jar rim wheel engraved or milled (1900-1989)
75. Clear interior ribbed snuff jar rim with no wheel engraving or milling (1900-1989)
76. Clear interior ribbed snuff jar body (1900-1989)
77. Clear interior ribbed snuff jar base with sunburst (1900-1989)
78. Clear snuff jar rim with wheel engraving or milling and no interior ribbing (1900-1989)
79. Clear interior ribbed snuff jar (whole) with wheel engraving and sunburst pattern on base (1900-1989)
80. Clear chamfered cornered snuff base with sunburst (1900-1989)
81. Clear interior ribbed snuff jar base without sunburst pattern (1900-1989)

Other:

82. Glass stopper
83. Cosmetic related jar/bottle
84. General household bottle
85. Jug
89. Milk Bottle
91. Threaded, handmade stopper (-1903)

Bottle Lip Finish:

1. Not identifiable (too fragmentary)
2. Blob top (has a rounded lip/rim and slightly flared neck handmade 1870s-1880s; beverage)
3. Hutchinson stopper & Baltimore loop (similar to blob top with interior curvature designed to hold metal stopper; handmade 1880-1910; beverage)
4. Codd stopper (designed with interior curvature to hold marble stopper; 1880-1910; beverage)
5. Crown (handmade 1892 to 1920; beverage)
6. Crown (machine made 1905-1989; beverage)
7. Oil Type (flat rim with rounded sides and straight neck;handmade 1892-1920; medicinal-extract)
8. Oil Type (flat rim with rounded sides and straight neck;machine made 1905-1989; medicinal-extract)
9. Round ring with sloped interior (cork closure with bead ring and straight neck; medicinal-extract)
10. Round ring with flat top (cork closure with bead ring and straight neck; medicinal-extract)
11. Round ring with round top (cork closure with bead ring and straight neck; medicinal-extract)
12. Patent (cork closure with square ring and straight neck;medicinal-extract)
13. Brandy and Bitters (cork closure with flared lip over round bead ring and flared neck)
14. Brandy with collar (cork closure with flared lip over collar and flared neck; liquor-beverage)
15. Brandy with second ring (cork closure with flared lip over round bead ring, widely separated second bead ring and flared neck; liquor-beverage)
16. Champagne or wine (type 1; single applied string rim; liquor)
17. Champagne or wine (type 2; liquor)

18. Gin (single protruding bead ring; liquor)
19. Prescription (cork closure with square bead and flared neck; medicinal-extract)
20. Double ring (cork closure with wide round ring over smaller round ring and straight neck; handmade 1850-1920; medicinal-extract)
21. Double ring (wide over small, cork closure with large round bead over small round bead and straight neck; machine made 1920-1940; medicinal-extract)
22. Double ring (equal sized ring; cork closure with two equal sized round bead rings and straight neck; machine made 1910-1940; medicinal-extract)
23. Collar over ring (cork closure with collar over single round bead ring and straight neck; medicinal-extract)
24. Pressure type (widely separated double ring; cork closure with two widely separated round bead rings and straight neck; medicinal-extract)
25. Non-standardized screw thread (machine made 1903-1920; multiple-need to specify)
26. Standardized or continuous screw thread (machine made 1919-1988; multiple need to specify)
27. Lug type (machine made 1906-1988; multiple-need to specify)
28. Plain or shear neck (cut neck with no rim or lip; multiple-need to specify)
29. Internal scar (press on lid type with internal rim for holding lid; milk)
30. Packers (cork closure with square bead; and straight neck; medicinal-extract)
31. Packers with widely separated ring (cork closure with square bead and a small round bead widely separated down the neck; medicinal-extract)
32. Snuff lip type 1 (cork or paper closure with small bead olive green or brown snuff)
33. Snuff lip type 2 (with or without milling; clear snuff)
34. Snap on lid rim (snap on metal lid closure (e.g., jelly jar ) and straight neck/sides; multiple-need to specify)
35. Round ring over collar (cork closure with round bead ring over collar and straight neck; medicinal-extract)
36. Triple ring (cork closure with two bead rings over a third round bead ring and straight neck; machine made 1910-1940; medicinal-extract)
37. Ring with collar and second ring (cork closure with round bead ring and collar over widely separated round bead ring and straight neck; medicinal-extract)
38. Packers over ring (cork closure with a packers square bead over a single round bead ring and straight neck; medicinal-extract)
39. Double ring over collar (cork closure with two equal sized round rings over a collar and straight neck; medicinal-extract)
40. Snap-on lid rim for wide mouth jar (multiple-need to specify)
41. Wax seal (wax seal closure fruit jar rim; handmade 1855-1880; fruit jar)
42. Lightening bail (lightening bail closure for fruit jar; handmade 1875-1915; fruit jar)
43. Lightening bail (lightening bail closure for fruit jar; machine made 1903-1988; fruit jar)
44. Ground lip (can occur with a variety of closure styles and represents those bottles where the rim edge has been ground down; handmade 1858-1915; multiple-need to specify)
45. Ground lip with threads (non-standardized threads with ground lip; handmade 1858-1915; multiple-need to specify)
46. Internal threads (closure with threads on the interior of the rim/neck; handmade 1860-1980s; multiple-need to specify)
47. Mineral water type 1 (cork closure with flared rim and flared neck; beverage)
48. Mineral water type 2 (cork closure with flared rim over half collar and flared neck; beverage)
49. Generic brandy/mineral water (too fragmentary to distinguish; beverage)
50. Round ring with sloped interior, half collar and flared neck (medicinal-extract)
51. Square ring with sloped interior (cork closure with bead ring and straight neck; medicinal-extract)
52. Germicide (see drawing)
53. Cork closure with flat ring and round edges over square ring and widely separated bead ring and slightly flared neck (medicinal-extract)
54. Cork closure with ring bead and sloped interior over a separated collar and a second, small ring bead with flared neck (medicinal-extract)
55. Clear fruit jar spring clip closure (1905; fruit jar)
56. Indented collar with straight neck (bluing bottle)
57. Packers type with straight neck (condiment)
58. Cork closure with flared brandy style lip, collar and ring bead and straight neck (medicinal-extract, bitters)
59. Cork closure with flat top and flat protruding bead below the rim and straight neck (liquor?)
60. Folded rim (multiple-need to specify)
61. Round ring with sloped interior and widely separated ring on a straight neck (medicinal)

Vessel Morphology: For rim sherds and fruit jar caps only

1. Not applicable: (not a lip/neck)
2. Wide mouth vessel (greater than diameter of soda can)
3. Narrow mouth vessel (less or equal in diameter to soda can)
4. Indeterminate; too small to identify

Vessel Type:

1. Beverage
2. Medicinal/extract
3. Snuff

4. Fruit jar
5. Unknown
6. Cosmetic/toiletry
7. Wide mouth foodstuffs (non-fruit jar)
8. Narrow mouth household bottle (e.g., sauce)
9. Jug style bottle (handle)
10. >1/2 gallon bottle
11. Condiment jar
12. Serum bottle
13. Milk related
14. Dye or blacking bottle
15. Poison
16. Germicide
17. Bitters
18. Ink bottle/well
19. Case bottle

Maker's Mark: For base sherds only

**3-Architecture**

Subclass:

1-Nails:
Wrought (pre-1840)
Machine cut (square; 1840-1880)
Wire (1880-1988)

2-Brick:
Handmade (1840-1900)
    hand molded (pre-1875)
    hand pressed (pre-1876)
    transitional, extruded brick (1876-1903)
Machine-made (1890-1989)
    machine, steam-pressed (1876-1903)
    machine, hydraulic-pressed (1903-1989)

3-Staples and Screws:
Unknown
Fence staple
Large non-fence staple
Wood staple
Flat-headed screw
Round-headed screw
Filister-head screw
Square-headed screw
Hexagon-head screw
Oval-head screw
Misc. staple (e.g., carpet tacks)
Wood to metal stud
Wood split brad

4-Window Glass:
Regular (<3.3mm)
Non-safety plate glass
Safely plate glass
Wire mesh reinforced window glass
Decorative window glass (e.g., bathroom glass)
Type unknown

5-Building Material:
Cinder block
Plaster
Wood shingles
Flooring slate
Plywood
Cut stone
Grout
Sheet metal
Cement
Flagstone
Tarpaper
Sewer pipe
Lumber
Cloth or vinyl wallpaper
Masonite
Putty/glazing
Concrete
Asphalt shingles
Corrugated metal roofing or siding
Wood molding or trim
Metal plumbing
Fiberglass
Lead head for roofing nail
Mortar
Asbestos siding
Roofing slate
Particle board
Newspaper
Pvc piping
Metal disk with nail for taking down tarpaper
Linoleum/formica

6-Metal Hardware:
Hollow metal doorknob
Metal indoor fixtures
Door lock set
Sash pulley
Door/gate hinge
Window screen
Door plate/latch
Escutcheon
Lightening rod
Hanger strap
Hinge parts
Door or window framing
Screen door spring
Gate post closure
Window shade part
Window latch
Gutter
Decorative finial for gate or fence
Sheet metal
Padlock/key

7-Other Hardware:
Porcelain doorknob
Agate (redware) doorknob

Ceramic drainage pipe
Ceramic tile
Porcelain fixtures
Wire:
    Plain, bailing and twisted wire with no barbs
    Barbed wire (specify barb type)
    Hog
    Chicken
    Decorative/ornamental
    Non-electrical copper wire
Brass
Wire spool (plain or barbed)

**4-Personal Remains**

Material:
1. Aluminum
2. Antler
3. Asbestos
4. Asphalt
5. Bakelite
6. Bone
7. Brass
8. Brass plate
9. Brick
10. Carbon
11. Celluloid
12. Cellophane
13. Cement
14. Chalk
15. Charcoal
16. Chrome plate
17. Cinderblock
18. Cloth
19. Coal
20. Coarse earthenware
21. Concrete
22. Copper
23. Copper plate
24. Cork
25. Enamel plate
26. Fiber (natural)
27. Fiberglass
28. Foodstuff
29. Glass
30. Gold
31. Gold plate
32. Graphite
33. Grout
34. Horn
35. Iron
36. Lead
37. Leather
38. Lignite
39. Limestone
40. Linoleum
41. Marble
42. Mortar
43. Masonite
44. Mother of pearl
45. Nickel
46. Nickel plate
47. Paint
48. Painted iron (e.g., tobacco tags)
49. Paper (product)
50. Particle board
51. Petrified wood
52. Pewter
53. Plaster
54. Plaster of Paris
55. Plastic (hard)
56. Plastic (soft)
57. Plexiglas
58. Plywood
59. Polypropylene
60. Polyurethane foam
61. Porcelain
62. Pot metal
63. Putty/caulk
64. Quartzite
65. Refined earthenware
66. Resin
67. Rubber/rubber base
68. Sandstone/siltstone
69. Semi-coarse earthenware
70. Shale
71. Shell
72. Silver (coin silver)
73. Silver plate
74. Simulated shell
75. Slag
76. Slate
77. Solder
78. Stainless steel
79. Stoneware
80. Straw
81. Styrofoam (polystyrene)
82. Tar
83. Tarpaper
84. Tin
85. Tin plate
86. Vinyl
87. Wax
88. White metal
89. Wood
90. Zinc
91. Zinc plate
92. Composite (e.g., plated spoon with bone handle)
93. Kaolin
94. Stone (not identified by type)
95. Ceramic (not identifiable by type)

Type:

1-Buttons:
Type unknown
Single hole
Two hole
Three hole
Four hole

Five hole
Single hole, cloth covered w/shank
Single hole, metal w/shank
Single hole, glass w/shank
Single hole, ceramic w/shank
Stud (collar button)
Cufflink
Single hole, plastic w/shank
Single hole, shell w/shank
Single hole, bone w/shank
Single hole front/double hole back

2-Metal Fasteners:
Type unknown (too fragmentary)
Garment rivet
Snap lock plate (corset fastener)
Garter fastener
Hook (to hook and eye)
Eye (to hook and eye)
Large safety pin
Small safety pin
Zipper or zipper part
Snap
Suspender clip or fastener (non-button variety)
Sew-on sequin metal
Cam clip

3-Shoe and Boot Parts:
Eyelet
Hook eye
Shoe button
Shoe button hook
Shoe sole or heel part (including heel tap, tacks, nails)
Leather part (upper, tongue, inner sole)
Laces and parts
Shoe buckle
Rubber boot/galoshes buckle
Complete shoe/boot
Shoe horn

4-Buckles, Straps, and Parts:
Leather belt part
Fabric belt part
Metal belt end (half moon-shaped)
Belt buckle
Strap buckle (pack or knapsack type)
Strap D-ring
Strap snap hook (pack or knapsack type)
Strap adjuster

5-Fabric:
Cloth (undifferentiated fragment)
Cloth (discernable item; specify)
Leather (undifferentiated fragment)
Leather (discernable item; specify)

6-Smoking Related:
Tobacco pipe
Cigarette and parts
Cigars and parts
Tobacco tags
Cigar or cigarette case
Matches
Lighter
Ashtray
Cigar box

7-Toys and Collectibles:
Child-size toy vessels (incl. utensils)
Doll-size toy vessels (incl. utensils)
Marbles
Figurine
Vehicle (e.g., cars, trucks)
Game tokens and playing pieces
Guns
Non-ceramic dolls
Ball
Model (plastic or wood)
Tricycle
Toy beads
Unidentifiable toy part (e.g., decorative chain)
Unidentifiable knick-knacks

8-Dolls:
Solid-molded ceramic
Slipcast-molded ceramic
Celluloid, plastic
Cloth
Wood
Organic (e.g., husk, nut, apple)
Cloth and china
Bone

8A-Doll Decoration:
1. None
2. Molded or incised (no color present)
3. Hand-painted
4. Molded or incised and hand-painted

8B-Doll Decoration Color:
1. None
2. Black
3. Blue
4. Brown
5. Red
6. Pink
7. Polychrome
8. Gray

8C-Doll Body Parts:
1. Head
2. Body (torso)
3. Arm
4. Leg (include foot and boot fragments)
5. Arm or leg (fragment too small to distinguish between arm or leg)
6. Eye
7. Complete
8. Unknown
9. Ear

10. Joint for limbs/head
11. Nose

9-Musical Items:
Mouth harp
Harmonica part
Woodwind reed
Free reed instrument (e.g., accordion)
Double-sided 78 record on graphite disk (1915-1955)
Single-sided 78 record on graphite disk (1900-1923)
Cylinder-type record (1890-1915)
33 1/3 microgroove record (1948-1990)
45 rpm record (1950-1990)
Compact disc (1963- )
Unknown record type

10-School Items:
Slate pencil
Wooden lead pencil or part (e.g., eraser, ferrule)
Pen or pen part
Chalk
Slate board (without ruled lines)
Slate board (with ruled lines)
Paper brad
Pencil lead only
Ruler
Small paint brush part (e.g., art brush)

11-Jewelry and Personal Adornment:
Watch parts
Ring
Chain
Clasp to chain
Broach
Tie tack/bolo tie part
Bead
Stickpin
Garment stud
Charm
I.D. tag
Decorative hair comb
Hat pin

12-Miscellaneous Personal Possessions:
Coin (specify type and date)
Token (specify)
Medallion (specify)
Coin purse/handbag parts
Eyeglass parts
Military/police insignia or equipment
Wallet
Book, diploma, certificate parts
Exercise equipment
Key to jewelry box or wardrobe
Mechanic pen or pencil
Newspaper
Campaign button
Camera part

10-Grooming and Hygiene Items:
Toothbrush parts
Razor
Razorblade
Comb
Brush
Syringe, needles, hypodermic
Eyedropper
Medicine tube, cream tube
Hair curlers, barrettes, other hair fasteners
Mirror
Compact, makeup case
Lipstick dispenser
Lice comb
Pacifier part
Personal metal container

**5-Faunal and Floral Remains**

1. Bone (include turtle and armadillo shell)
2. Shell-gastropods
3. Shell-mollusk
4. Egg shell
5. Glass gizzard stone
6. Ceramic gizzard stone
7. Seeds
8. Pits (e.g., peach/specify)
9. Nuts (e.g., walnut/specify)
10. Corn cob

**6-Metal Containers & Tin Cans**

Material: (see list under heading **4-Personal**)

Diagnostic Attributes: (for whole cans only)
1. Can with snap-on lid
2. Can with pop top or pull tab (1962-1990)
3. Oval-hinged tobacco-style can (1909-1990)
4. Tin can with key or metal strip-style opener (1866-1990)
5. Crimped rim or sanitary can (1902-1990)
6. Folded edge/rim (e.g., hole-in-top evaporated milk can)
7. Locked side seam can
8. Lapped side seam can
9. Rolled rim can with wire in rim
10. Rolled rim can without wire in rim
11. Cardboard can with metal lid
12. Hole-in-cap can
13. Hand-crimped rim with rubber gasket (pre-1896)
14. Aerosol can

**7-Unidentifiable Thin and Heavy Metal**

Material: (see list under heading **4-Personal**)

Type:
1. Thin metal (less than 1/8 inch thick)

2. Heavy metal (greater than 1/8 inch thick)
3. Thin metal strap
4. Bar stock with holes
5. Bar stock without holes
6. Small chunk or blob (e.g., lead)

**8-Household Items**

Material: (see list under heading **4-Personal**)

1-Silverware/Flatware:
Teaspoon
Butter knife
Handle
Tablespoon
Carving knife
Ladle
Dinner fork
Serving spoon
Dinner knife
Carving fork

2-Stove Part:
Stove frame/body
Lid handle
Burner, plate, griddle
Pipe
Door
Gas burner
Leg
Damper
Draft register

3-Vessels (excluding ceramic and glass):
Cooking pot/pan
Mixing/serving dish
Coffee pot
Cup
Bowl
Vessel handle
Plate
Salt/pepper shaker
Baking dish
Glass

4-Kitchen Utensils:
Foodstuff container part (e.g., spout)
Can/bottle opener
Kitchen scale
Egg beater

5-Bottle/Tube Closures:
Kerr fruit jar cap with open center (1915-1990)
Kerr fruit jar lid insert (1915-1990)
Solid zinc fruit jar lid (1870-1930)
Indeterminate fruit jar lid type
Hutchinson stopper (1875-1891)
Screw-on lid
Crown cap
Codd stopper
Rubber fruit jar seal
Snap-on cap
Vacuum-style cap
Spout (e.g., salt box)

6-Furnishings:
Appliance-related (specify)
Door stop
Door key
Lighting fixture (lamp, chandelier)
Decorative furniture part
Furniture caster
Kerosene or oil lamp part (e.g., wick, burner base; specify)
Heater parts (e.g., gas jet, valve)
Pull chains
Furniture latch or lock plate
Curtain rod, shade, or drape part
Bed or other furniture springs
Upholstery button or tack
Tabletop slate
Cabinet or drawer handle, pull, or latch
Clock parts
Bed frame hook, brace, fastener
Furniture hinge
Mirror
Picture or mirror hooks, mounting parts

7-Sewing and Clothing Maintenance:
Sad iron part
Darning needle
Clothes hanger
Washtub part
Electric iron part
Scissors or shears
Knitting needles
Sacking needles
Washboard
Sewing machine part
Straight pin
Tracing wheel
Ironing board part
Crochet needle
Sewing needle
Clothespin part
Washer/dryer part

8-Household Maintenance:
Paint can
Paint brush
Ladder
Bucket/pail
Mop or broom part
Vacuum cleaner part

9-Miscellaneous Other:
Aluminum foil

**9-Machine, Wagon and Hardware**

Material: (see list under heading **4-Personal**)

Type:

1-Machine Hardware:
Mower blade
Tie rod
Bushing
Hitch
Screw thread adjuster
Mower teeth
Mower guard
Ladder chain socket
Ladder chain
Plow blade
Gear
Pins and bolts
Clevis
Flange
Flywheel
Harrow teeth
Unidentifiable

2-Wagon Hardware:
Wiffle tree clip
Other clips
Box brace
Other braces
Spring
Bow staple
Drift pin/bolt
Ox yoke ring
Wiffle tree eyebolt
Box rod
Box iron
Clevis
Hub parts (e.g., rings, nuts)
Unidentifiable

3-Automotive Hardware (including tractors):
Whole vehicle
Engine, mechanical part (specify)
Engine, electrical part (specify)
Engine, cooling system part (specify)
Chassis, mechanical part (specify)
Chassis, electrical part (specify)
Fuel and exhaust parts
Oil or grease cans
Wheel parts
License plate
Instrument parts
Coachworks parts
Accessories

4-Miscellaneous Hardware:
Bolt and nuts
Misc. springs
Pipe coupling
Clevis (non-machine or wagon)
Tapered pin
Pipe hanger
Washers
Pipe, tubing
Rivets
Cotter pins
Barrel hoops
Ball bearings
Wing nuts
Pipe cap, plug
Grommets
Metal hooks
Valve stem
Box rivet
Chain, chainlink
Bracket, brace, coupling or shackle

**10-Metal Tools**

Material: (see list under heading **4-Personal**)

1-Personal Accessories:
Pocket knife

2-Fishing and Hunting:
Fishing hook
Fishing weight
Fishing tackle
Fishing reel
Fishing pole part
Trap part

3-Garden and Yard Maintenance:
Garden hoe
Pitch fork
Grub hoe
Shovel
Rake

4-Blacksmithing, Ferriering:
Anvil
Brazing rod
Hammer, mallet
Worked, damaged, modified raw material
Cut, snipped raw material
Prongs
Bellow part

5-Other Tools:
Hammer
Mallet
Axe, hatchet
Regular screwdriver
Phillips screwdriver
Bastard file
Triangular file
Non-adjustable wrench
Adjustable wrench
Pliers

Wire cutters
Saw part
Chisel or wedge
Drill part
Ferrule
Scoop
Funnel
Whetstone
Cast iron shoe last
Magnet
Nail set/punch

**11-Horse and Stable Gear**

Type:
Horse shoe
Mule shoe
Shoe nails
Harness or rein buckle
Harness or hame ring
Rivet
Snap hook
Spur
Rein with ring
Rein with rivet
Rein with rivet and buckle
Rein with rivet, buckle, and ring
Rivet burr
Ear tag
Mending brass
Cow tie (chain, ring, lariat swivel)
Cowbell
Halter strap bolt
Bit

**12-Firearms**

Material: (see list under heading **4-Personal**)

Type:
Rimfire cartridge
Center fire cartridge
Shot gun shell
Percussion cap
Grape shot
Lead shot (.32 cal. or larger)
Skeet, clay pigeon
Lead ball projectile (.32 cal. or larger)
Minnie ball projectile (hollow base)
Conical bullet (fixed ammunition-current)
Shotgun wad
Shotgun shell paper cap
Lead bullet
Gun flint
Unidentifable

Caliber or Gauge: (specify)

Maker's Mark: (specify)

None, not applicable
Not legible

1-Single Letter:
U (1867-1902)
F
G
A
(diamond); (1908-1925 if rimfire)
W (1898-1988)
H (1875-1940; long rifle 1917-1988)
(iron cross); (1902-1907)
P (1887-1934)
R (1906-1916; long rifle 1900-1988)
N
C (long rifle 1917-1988)
N with slash through center
D
F (long rifle 1917-1988)

2-PETERS:

Peters/HV (1897-1935)
Peters/No. 15/Ideal (1897-1935)
Peters/32/ACP (1903-1988)
Peters/HV (.22 long; 1930-1988)
Peters/League/No. 12
Peters/38
Peters/Referee/No.12
Peters/Victor/No.20/Made in USA
Peters/High gun/No.12
Peters/Target/No.20
Peters/Target/No.12
Peters/QS/32-2-(Centerfire rifle or pistol)
Peters/Victor/16/Made in USA
Peters/32-20
Peters/Victor/12/Made in USA
Peters/No. 16/Referee

3-REM-UMC:

Rem/Umc/New Club (1910-1960)
Rem/Umc/7.65mm (1910-1976)
Rem/Umc/32ACF (1910-1960)
Rem-Umc/32S+W (1910-1960)
Rem-Umc/38 WCF (1910-1960)
Rem-Umc/380-Auto (1910-1960)
Rem-Umc/Shur Shot/20 (1910-1960)
Rem-Umc/Super Shot/12
Rem-Umc/38S+W (1910-1960)
Rem-Umc/32 WCF (1911-1960)
Rem-Umc/New Club/No.12
Rem/Umc/date
Rem/Umc/45/Colt/(1940-1988)
Rem-Umc/Nitro Club/No.12 (1910-1960)
Rem-Umc/38 Long
Rem-Umc/38S+W Special (1910-1960)
Rem-Umc/32-7.65mm (1910-1976)

Rem-Umc/Nitro/.410 (1910-1960)
Rem-Umc/Nitro Club/No.20 (1910-1960)
Rem-Umc/Shurshot/No.12
Rem-Umc (1913-1935)
Rem-Umc/25ACP
Rem-Umc/No.20/Arrow
Rem-Umc/300 Sav
Rem-Umc/New club/No.10
Rem-Umc/New Club/No.16
Rem-Umc/38-40

4-US:

US (1869-1936, if rimfire)
U.S./41 Long D.A. (1877-1935)
U.S. (C.G.?)/No.12/Star (1864-1930)
U.S./Defiance/Made in USA/No.12 (1869-1936)
U.S./Climax/No.12 (1869-1936)
U.S./WCF/No.12 (1869-1936)
U.S./S+W/.38 Special (1902-1988)
U.S./S+W/.32
U.S. (C or G) C.O./.25 C.A.
U.S./.38 S+W

5-WRA Co:

WRA Co/44 WCF (1875-1940)
WRA 410/Made in USA (1940-1988)
WRA CO/32 WCF (1875-1940)
WRA Co/38 S+W (1877-1940)
WRA Co/Rival/No.12 (1875-1940)
WRA Co/38 Special/S+W (1902-1940)
WRA CO/32 S+WL (1896-1940)
WRA CO/32 AC (1903-1940)
WRA 40/Super Speed/Made in USA (1940-1988)
WRA CO/44 S+W Special
WRA CO/44 WCF (1911-1940)
WRA CO.41 LBA
WRA CO/38 WCF (1911-1940)
WRA CO/Star/No.12
WRA CO/38 Special
WRA CO/45 Colt
WRA CO/S+W/38
WRA CO/Rival/No.10
WRA Co/.38 S
WRA/38-40 WIN

6-WINCHESTER:

Winchester/Blue Rival/10
Winchester/Ranger/No.12
Winchester/New Rival/No.12 (1901-1988)
Winchester/Repeater/No.12
Winchester/Repeater/No.16
Winchester/Leader/No.12
Winchester/Blue Rival/No.12
Winchester/Leader/No.20
Winchester Nublack/No.16
Winchester/Made in USA/No.12/Super Speed
Winchester/No.12/Nublack
Winchester/No.16/Ranger
Winchester/Western/12 GA
F C 30-30 Win

7-WW:

WW Super/30-38 Win
WW/20 Gauge
WW/Super X
WW/410
WW/Super/357 Magnum
Ww/16 Gauge

8-WC Co:

WC CO/38 Colt
WC CO/38-40
WC Co/Sureshot/No.12
WC CO/No.12/Essex
WC CO/32/S+W

9-WESTERN:

Western/Made in USA/Xpert/No.12
Western/New Chief/No.12 (1898-1940)
Western/Xpert/No.12 (1898-1940)
Western/.380 Auto (1908-1988)
Western/Super X/No.12
Western/Field Load/No.12
Western/32 Auto
Western/Made in USA/Xpert/No.16
Western/New Chief/No.16

10-REMINGTON:

Remington/Umc/New Club/No.16 (1910-1960)
Remington/UMC/New Club/No.12
Remington/Peters/20 Gauge
Remington Express/310
Rem (on .22 cal rimfire cartridge)
Remington Peters/12
Remington/16 GA/Peters

11-UMC:

UMC/32 S+W (1867-1911)
UMC/41 Short (1884-1911)
UMC/45 Colt (1873-1911)
UMC/.38-40
UMC/38 S+W (1873-1940)
UMC/.38 CRW (1911-1930)
UMC/.41 LC (1877-1935)
UMC/32 WCF
UMC/380 CAPH
UMC/45 WCF

UMC/38 Short
UMC/SH/38 Long
UMC/32-20
UMC/44 CFW
UMC/SH/38 S+W

12-UMC CO:

UMC CO/Nitro Club (1867-1911)
UMC CO/New Club/No.10 (1867-1911)
UMC CO/New Club/.No.12 (1867-1911)
UMC CO/New Club/No.16 (1867-1911)
UMC CO/New Club/No.16
UMC CO/Club/No.12
UMC CO/No.12

13-R-P:

R-P/38 Special (1960-1988)
R-P/30-50 SPRG 91960-1988)
R-P/38 Auto

14-S+W:

S+W/NRA/38
S+W/RHA CO/32 (1887-1916)
S+W/36
S+W/SPL+P/38

15-GA:

(dove) GA/MADE IN USA/20
GA/NITRO/EXPRESS/20
(dove)/GA/MADE IN USA/12

16-OTHER:

HP (1922-1988)
XL
XR
XB
SUPER X
U/HI/SPEED (1910-1960)
PCC/LEAGUE/12 (1897-1935)
NEW RIVAL/NO.12 (1901-1935)
AMERICAN EAGLE/No.12 (1875-1930)
AL
RA/17
FEDERAL/MONARK/NO.20
FM UMC/32
WRA/18
RWS/38 M+H
RELIANCE REDHEAD/NO.16
SPRG/RP/30-06
SPRG/SUPER X/30-06
FO/410
RA/42
SEARS/20 GA
SHAFFER/LADY ESTHER USA/38
FC/32 AUTO
MW
FEDERAL/MONARK/NO.12
(BEE)
FC 308 WIN
FC CO. Prize 12 G
FEDERAL/HI-POWER/NO.16
D.C.CO/38 M+H (38 cal)

Table C.1

Artifacts from Units at 41DN401[1]

| Unit | SC | R | S | Po | B | T | L | U | W | CN | WN | HB | MB | BM | P | TH | TC | H | MW | MH | T | A | HS | E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Shovel Test Pits: Survey Phase* | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | 1 | | | 3 | | | | | | | | | 2 | | 2 | | | | | | | | |
| 2 | | | | | 1 | | | | | | | 1 | | | | | | | | | | | | |
| 3 | | | | | | | | | | | 1 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | 1 | | 2 | | | | | | | | |
| *1x.5-m Units dug during testing phase; TH and TC combined; MW and MH combined.* | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | 1 | 1 | | 6 | 2 | 1 | | 6 | 5 | 1 | | | 455 | 2 | 47 | | | | | | | | |
| 2 | | 2 | 16 | | 1 | 2 | 1 | | 2 | 4 | | | | 75 | | 5 | | | | | | | | |
| 3 | | 10 | | 1 | 27 | | 4 | | 43 | 21 | 4 | 2 | 3 | 155 | 4 | 15 | | 2 | 2 | | | 1 | | |
| 4 | | 21 | | 1 | 5 | | | | 9 | | | | | 25 | | 3 | | | 1 | | | | | |
| 5 | | 1 | | 2 | 78 | 9 | 6 | | 66 | 21 | 13 | | | 13 | 3 | 14 | | 1 | 1 | | | | 1 | 1 |
| 6 | | 19 | | 3 | 31 | 1 | | | 26 | 12 | 5 | 6 | | 91 | 1 | 10 | | 1 | | | | | | |
| 7 | | 4 | 3 | | 10 | 3 | | | 4 | 14 | 1 | | 1 | 7 | | 7 | | | | | | | | |
| 8 | | 3 | | | 7 | | | | | 3 | | 1 | | 20 | | 5 | | | | | | | | |
| 9 | | 4 | 6 | | 5 | | | | 3 | 23 | 12 | | | 81 | | 31 | | 4 | 1 | | | | | |
| 10 | | 11 | 6 | 2 | 29 | 2 | 5 | | 3 | 23 | 12 | | | 129 | | 23 | | | | | | | 3 | |
| 11 | | 5 | 5 | | 7 | | | | 3 | 2 | 1 | | | | | 2 | | | | | | | | |
| 12 | | 19 | 14 | 1 | 47 | 2 | 2 | | 21 | 22 | 13 | | | 9 | 9 | 15 | | | 3 | | | | 1 | |
| 13 | | 18 | 4 | | 28 | 3 | 2 | | 28 | 24 | 14 | | 1 | 29 | 29 | 27 | | 1 | 1 | | | | 1 | |
| 14 | | 35 | 8 | 4 | 76 | 6 | | | 54 | 37 | 8 | 1 | | 12 | 1 | 49 | | 2 | 1 | | | | | |
| 15 | | 31 | 3 | 1 | 71 | 4 | 3 | | 36 | 20 | 12 | | 4 | 14 | | 38 | | 1 | 1 | | | | | |
| 16 | | 37 | 9 | 7 | 115 | 1 | 7 | | 4 | 15 | 27 | | | 18 | 3 | 50 | | 4 | | | | | | |
| 17 | | 41 | 12 | 5 | 80 | 3 | 3 | | 47 | 43 | 15 | 1 | | 14 | 3 | 66 | | | 3 | | | 1 | 1 | |
| 18 | | 15 | 9 | 2 | 33 | 6 | 3 | | 20 | 3 | 2 | 1 | | 12 | 1 | 64 | | | 1 | | | | | |
| *1x.5-m Units dug during mitigation:* | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | | 13 | 4 | 10 | 38 | | | | 25 | 19 | 7 | | | 7 | | 2 | 14 | | | | | | | |
| 20 | | 9 | 1 | 3 | 18 | | | | 11 | 6 | 5 | | | 16 | | 2 | 33 | | | 1 | 1 | | | |
| 21 | 1 | 14 | 2 | 2 | 24 | 2 | | | 23 | 7 | | 2 | | 2 | 2 | | 3 | 1 | | | | 1 | | |
| 22 | | 31 | 5 | 7 | 182 | | 1 | | 100 | 24 | 54 | 2 | | 2 | 1 | | 54 | | 1 | | 1 | 1 | | 1 |
| 23 | | 15 | 1 | 2 | 25 | | | 1 | 28 | 4 | 6 | 26 | | 2 | | 2 | 8 | 10 | | | | | | |
| 24 | 1 | 11 | 1 | 3 | 95 | 1 | 1 | | 20 | 4 | 30 | 5 | 1 | 9 | 3 | 5 | 126 | 2 | 1 | | | | | |
| 25 | | 1 | | | 12 | | | | 4 | | | | | 1 | 1 | | 5 | 3 | | | | | | |
| 26 | | 19 | 8 | 2 | 80 | 3 | | 2 | 25 | 12 | 35 | 1 | 1 | 16 | 4 | 4 | 31 | | 1 | 2 | | | | |
| 27 | | 9 | 8 | | 109 | 4 | 4 | | 45 | 30 | 88 | 6 | | 4 | 12 | 1 | 122 | 7 | | 10 | | 4 | | 2 |
| 28 | | | | | 10 | | | | 13 | 4 | 3 | 90 | 9 | 758 | 3 | 1 | 2 | | 2 | | | 1 | 1 | 1 |
| 29 | | | | | 9 | 1 | 1 | | 17 | 1 | 2 | 14 | 29 | 157 | 2 | 1 | | 1 | | | | 1 | | 1 |
| 30 | | 10 | 1 | | 47 | | | | 51 | 6 | 7 | 9 | 1 | 4 | 7 | 12 | 10 | 1 | 3 | | | 1 | | |
| 31 | | 5 | 2 | 7 | 32 | 27 | 7 | 1 | 71 | 9 | 166 | 9 | | 6 | 12 | 3 | 392 | 5 | 13 | | | 3 | 1 | 2 |
| 32 | | 5 | 1 | 1 | 112 | 8 | | | 52 | 5 | 70 | 3 | 1 | 8 | 3 | 2 | 12 | 19 | 12 | | | 3 | | 2 |
| 33 | 1 | 25 | 4 | 7 | 67 | 9 | | 1 | 26 | 13 | 18 | | | 5 | 2 | 80 | 19 | 1 | 2 | | 1 | | 1 | |
| 34 | | 27 | 2 | 6 | 82 | 4 | 9 | 1 | 62 | 15 | 31 | 2 | | 3 | 2 | 7 | 9 | | | 1 | | | 2 | |
| 35 | | 16 | 2 | 3 | 61 | 15 | | | 133 | 4 | 43 | 41 | | 4 | 18 | 3 | 114 | 4 | 5 | 3 | | 1 | | 4 |
| 36 | | 7 | 2 | | 14 | 3 | | 1 | 38 | 8 | 5 | 153 | | 1 | | | 6 | 1 | | | | | | |
| 37 | | 1 | | | 10 | | | | 80 | 1 | 16 | | | | 2 | | 14 | 3 | | | | 1 | | |
| 38 | | | | | 2 | | | | 2 | 2 | | | | | | | | | | | | | | |
| 39 | | 1 | | | 6 | | | | 2 | 6 | 1 | | 1 | | 1 | 1 | | | | | | | | |

Table C.1 (cont.)

| Unit | SC | R | S | Po | B | T | L | U | W | CN | WN | HB | MB | BM | P | TH | TC | H | MW | MH | T | A | HS | E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *2x2-m Units in Mitigation Block:* | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 SW | | 56 | 13 | 3 | 196 | 1 | 2 | 2 | 128 | 44 | 17 | 1 | | 11 | | 2 | 50 | | 2 | 2 | | | | |
| 50 SE | 1 | 87 | 22 | 9 | 257 | 2 | 5 | 5 | 177 | 52 | 38 | 3 | | 32 | 11 | 15 | 138 | 2 | | 2 | | 2 | 1 | |
| 50 NW | | 98 | 26 | 5 | 248 | 6 | 10 | 11 | 169 | 71 | 25 | | 6 | 32 | 10 | 18 | 40 | 3 | 1 | 3 | | 1 | 4 | |
| 50 NE | | 49 | 24 | 9 | 140 | 4 | | 6 | 116 | 47 | 28 | 7 | | 19 | 8 | | 190 | | 2 | | | 1 | | |
| 51 SW | | 58 | 10 | 5 | 169 | 1 | 3 | 2 | 147 | 52 | 40 | 1 | 5 | 25 | 7 | 3 | 105 | 1 | | | | 1 | 1 | |
| 51 SE | | 31 | 10 | 3 | 89 | | | 1 | 90 | 27 | 11 | 1 | 1 | 4 | | 1 | 35 | | | | | | | |
| 51 NW | | 48 | 23 | 5 | 95 | 2 | 2 | | 59 | 21 | 13 | 2 | 2 | 2 | 3 | 3 | 105 | | | 1 | | | | |
| 51 NE | | 35 | 7 | 2 | 71 | | | 2 | 78 | 29 | 20 | 6 | | 5 | 2 | 2 | 439 | 2 | | | | 2 | 2 | 1 |
| 52 SW | | 15 | 3 | 2 | 40 | 4 | | | 37 | 8 | 7 | 3 | 1 | 1 | | | 186 | 2 | | | | | | |
| 52 SE | 1 | 11 | 15 | 10 | 125 | 23 | 1 | 1 | 733 | 68 | 39 | 3 | 1 | 9 | 21 | 4 | 305 | 4 | | | | 1 | | |
| 52 NW | | 50 | 17 | 1 | 83 | 7 | 2 | 3 | 97 | 29 | 15 | 2 | | 6 | 3 | 6 | 101 | 1 | | 1 | | | 1 | |
| 52 NE | | 15 | 7 | 4 | 56 | | | | 65 | 18 | 23 | 1 | | 10 | 1 | | 124 | | 1 | | | | | |
| 53 SW | | 95 | 14 | 9 | 372 | 6 | 7 | | 132 | 54 | 36 | | 7 | 8 | 8 | 12 | 136 | 9 | | | | | | |
| 53 SE | | 60 | 22 | 13 | 254 | 23 | 3 | 4 | 126 | 58 | 43 | 7 | | 22 | 8 | 6 | 114 | 1 | | 2 | 1 | 1 | 2 | |
| 53 NW | 1 | 92 | 4 | | 33 | | 2 | | 21 | 7 | | | | | 2 | | 28 | 1 | | | | | | |
| 53 NE | | 104 | 22 | 20 | 258 | 21 | 3 | 3 | 150 | 97 | 82 | | 5 | 20 | 9 | 17 | 75 | 4 | 4 | 1 | 2 | 3 | | 1 |
| 54 SW | 1 | 19 | 14 | 2 | 141 | 2 | 2 | | 80 | 24 | 16 | 4 | | 7 | 4 | 4 | 61 | 3 | | 3 | | | 1 | |
| 54 SE | | 38 | 9 | 4 | 89 | 5 | 2 | 5 | 43 | 22 | 15 | | | 24 | 3 | 3 | 128 | | 1 | | | | 1 | 1 |
| 54 NW | | 30 | 13 | 11 | 198 | 2 | | | 108 | 58 | 46 | 3 | 1 | 17 | 6 | 12 | 90 | | | | | 1 | | |
| 54 NE | | 59 | 6 | 2 | 67 | 4 | 1 | 2 | 89 | 19 | 10 | 2 | | 9 | 1 | 5 | 59 | 2 | | 1 | | | 2 | |
| 55 SW | | 33 | 11 | 1 | 81 | 4 | 4 | 4 | 70 | 40 | 14 | 4 | | 14 | 4 | 7 | 51 | 1 | | | | 3 | | |
| 55 SE | | 89 | 14 | 8 | 197 | 2 | 3 | 1 | 104 | 37 | 37 | | | 22 | 1 | 9 | 220 | 391 | | | | | 3 | 1 |
| 55 NW | | 42 | 4 | 6 | 216 | 3 | 1 | 2 | 93 | 47 | 2 | | | | 2 | 4 | 205 | 11 | | | | | | |
| 55 NE | | 56 | 13 | 2 | 138 | 4 | 3 | 4 | 176 | 55 | 11 | 1 | | 33 | 3 | 19 | 84 | 9 | | 2 | 1 | 2 | | |
| 56 SW | 1 | 261 | 42 | 35 | 596 | 58 | 15 | 16 | 495 | 172 | 117 | | 8 | 44 | 24 | 20 | 148 | 10 | | 5 | | 3 | 4 | |
| 56 SE | 1 | 138 | 21 | 13 | 672 | 48 | 3 | 6 | 207 | 75 | 72 | 3 | 21 | 26 | 18 | 4 | 100 | 8 | | 1 | | 1 | 2 | |
| 56 NW | 1 | 124 | 19 | 15 | 686 | 18 | 8 | 17 | 218 | 100 | 88 | 3 | 4 | 19 | 14 | 21 | 143 | 26 | | 2 | | 2 | 4 | |
| 56 NE | 1 | 169 | 18 | 16 | 592 | 16 | 4 | 23 | 334 | 141 | 73 | | 12 | 40 | 14 | 38 | 71 | 10 | | 1 | | 3 | 3 | |
| 57 SW | | 104 | 12 | 13 | 416 | 15 | 1 | 6 | 212 | 75 | 60 | 3 | 3 | 27 | 14 | 10 | 161 | 3 | | 1 | | 3 | 2 | |
| 57 SE | | 115 | 13 | 16 | 338 | 12 | 8 | 13 | 267 | 96 | 42 | 1 | 8 | 22 | 14 | 12 | 87 | 20 | | 1 | | 2 | 4 | |
| 57 NW | | 91 | 12 | 13 | 373 | 7 | 11 | 9 | 206 | 91 | 41 | 10 | 6 | 32 | 15 | 10 | 68 | 3 | 2 | 1 | | 2 | 1 | |
| 57 NE | | 134 | 10 | 7 | 288 | 5 | 7 | 5 | 154 | 58 | 31 | | 9 | 26 | 7 | 2 | 138 | 17 | 1 | 3 | | 1 | 3 | |
| 58 SW | | 97 | 8 | 10 | 325 | 29 | 6 | 8 | 211 | 64 | 53 | | 1 | 27 | 7 | 17 | 130 | 3 | 1 | 2 | | | | 1 |
| 58 SE | 1 | 101 | 14 | 5 | 289 | 19 | 34 | 1 | 142 | 50 | 31 | 3 | 2 | 22 | 8 | 27 | 245 | | | | 1 | 1 | 1 | |
| 58 NW | | 90 | 16 | 7 | 389 | 8 | 8 | 5 | 157 | 50 | 40 | 2 | 2 | 22 | 6 | 20 | 140 | | | 4 | | | 1 | |
| 58 NE | | 69 | 20 | 1 | 211 | 3 | 2 | 3 | 139 | 46 | 31 | 3 | 8 | 7 | 13 | 9 | 465 | 22 | | | | 2 | 1 | |
| 59 SW | 5 | 177 | 28 | 16 | 836 | 35 | 26 | 163 | 338 | 66 | 119 | 3 | 2 | 92 | 28 | 15 | 954 | 15 | | 5 | 4 | 2 | 1 | 3 |
| 59 NW | 6 | 142 | 18 | 22 | 596 | 37 | 7 | 9 | 132 | 62 | 58 | 4 | | 12 | 4 | 3 | 205 | 4 | 2 | 2 | | 2 | | 1 |
| 59 NE | 3 | 118 | 16 | 25 | 721 | 46 | 31 | 18 | 169 | 43 | 70 | | | 23 | 14 | 14 | 136 | 8 | 1 | 1 | | 2 | 7 | |
| 60 SW | | 85 | 15 | 12 | 749 | 86 | 28 | 5 | 230 | 48 | 82 | 18 | 48 | 26 | 13 | 7 | 591 | 5 | 2 | 1 | | 2 | 2 | 1 |
| 60 SE | | 52 | 13 | 14 | 427 | 5 | 9 | 5 | 158 | 28 | 49 | 212 | 3 | 36 | 3 | 2 | 178 | 4 | 3 | 2 | 2 | | 2 | |
| 60 NW | | 146 | 15 | 7 | 882 | 69 | 7 | 6 | 239 | 85 | 130 | 3 | 2 | 35 | 16 | 21 | 279 | 9 | | 2 | 2 | 2 | 11 | 1 |
| 60 NE | | 93 | 25 | 19 | 598 | 6 | 4 | 4 | 369 | 118 | 150 | 18 | | 28 | 17 | 20 | 195 | 9 | 7 | 5 | | | 2 | |
| 61 SW | | 54 | 4 | 2 | 197 | 4 | 5 | 6 | 122 | 23 | 44 | 76 | | 49 | 16 | 7 | 131 | 13 | | 2 | 1 | | 2 | |
| 61 SE | 1 | 62 | 6 | 4 | 199 | 26 | | 4 | 288 | 40 | 60 | 8 | | 32 | 10 | 2 | 65 | 6 | | 1 | | 2 | 3 | |
| 61 NW | | 100 | 12 | 9 | 216 | 7 | 3 | 4 | 61 | 68 | 28 | 5 | | 18 | 8 | 4 | 25 | 3 | | 1 | 1 | 1 | | |
| 61 NE | | 67 | 13 | 9 | 281 | 8 | 19 | | 198 | 57 | 60 | 12 | 1 | 12 | 5 | 14 | 54 | 2 | | | | 1 | 1 | |
| 62 SE | 2 | 91 | 35 | 12 | 515 | 48 | 2 | 2 | 215 | 7 | 132 | 215 | 8 | 48 | 21 | 41 | 2203 | 15 | 2 | 5 | | 2 | 4 | |
| 62 NW | 11 | 51 | 11 | 13 | 714 | 58 | 3 | 16 | 257 | 3 | 52 | 7 | | 61 | 5 | 3 | 822 | 4 | 2 | | 2 | 3 | 1 | 1 |
| 62 NE | 14 | 82 | 17 | 29 | 237 | 11 | 3 | 8 | 98 | 19 | 59 | 9 | | 70 | 10 | 12 | 360 | 6 | 1 | 3 | | 4 | 3 | 1 |
| 63 SE | 16 | 93 | 11 | 24 | 563 | 23 | 8 | 19 | 967 | 37 | 103 | 230 | | 8 | 14 | 1 | 3 | 6 | 1 | 1 | | 2 | 2 | |
| 64 SW | 1 | 27 | 7 | | 409 | 3 | | | 120 | 18 | 24 | 501 | 1 | 7 | 3 | 1 | 76 | 3 | | | 1 | 1 | | |
| 64 SE | 1 | 34 | 4 | | 4130 | 3 | 1 | | 485 | 20 | 28 | 851 | 1 | 12 | | | 106 | | 1 | | | 2 | | |
| 64 NW | | 31 | 2 | 1 | 44 | 1 | | 3 | 29 | 10 | 6 | 1349 | | 12 | 2 | 1 | 24 | | | | | | | 1 |
| 64 NE | 1 | 87 | 4 | 1 | 57 | 43 | | 1 | 97 | 16 | 15 | 553 | | 8 | 1 | 4 | 308 | 2 | | | | | 1 | |
| 65 SE | | 3 | 2 | | 24 | 2 | 1 | | 8 | 6 | 9 | 362 | 73 | 283 | 4 | 1 | 60 | 2 | | 3 | | 1 | | |

[1] Only units and artifact categories containing remains are included in table; SC=semi-coarse earthenware; R=refined earthenware; S=stoneware; Po=porcelain; B=bottle glass, T=table glass; L=lamp glass; U=unid. glass; W=window glass; CN=cut nails; WN=wire nails; HB=handmade brick; MB=machine-made brick; BM=building material; P=personal items; TH=thin and heavy metal; TC=tin cans; H=household; MW=machine and wagon; MH=metal hardware; T=tools; A=ammunition; HS=horse and stable gear; E=electrical.; Only datable ceramics and bottle glass were used in the calculation of mean beginning dates.

Table C.2

Artifacts from Excavation Units at 41DN404[1]

| Unit | SC | R | S | Po | B | T | L | U | W | CN | WN | HB | MB | BM | P | TH | TC | H | MW | MH | T | A | HS | E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Testing*** | | | | | | | | | | | | | | | | | | | | | | | | |
| *1x.5-m Units:* | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 2 | 3 | | 6 | | | | 3 | 25 | | | | | | 1 | 3 | | | | | | | |
| 2 | | 7 | 1 | | 23 | | | | 2 | 5 | | | 10 | | | 3 | 3 | | | 1 | | 1 | | |
| 3 | | | | | | | | | 2 | 1 | 1 | | | | | | 7 | | | | | | | |
| 4 | | 1 | 1 | | | 1 | | 1 | | | | | | | | | | | | | | | | |
| 6 | | 2 | | | 1 | 1 | 1 | | | 2 | 1 | 26 | 102 | | | | | | | | | | | |
| 7 | | 1 | | | 2 | | | | | | | | | | | | | | | | | | | |
| 8 | | 1 | | | | | | | | | | | | | | | | | | | | | | |
| *1x1-m Units:* | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | 2 | 2 | | 19 | 4 | | 1 | 1 | | 4 | 62 | | 27 | 2 | | 1 | | | | | | | |
| 10 | | 4 | | | 8 | | 1 | | | 2 | 3 | 46 | | 25 | 1 | | | | | | | | | |
| 11 | | 3 | | | 15 | 1 | | | 2 | 4 | 10 | 20 | | 5 | | 1 | 2 | | | | | | | |
| 12 | | 7 | 1 | | 18 | | | | 12 | 9 | 1 | 2 | | 1 | | 7 | 2 | | 3 | | | | | |
| 13 | | 7 | 3 | | 28 | | | | 9 | 22 | 1 | 4 | | 5 | 2 | 7 | 17 | | 3 | | | 1 | | |
| 14 | 1 | 8 | 5 | | 38 | | | | 10 | 37 | 3 | 7 | | 5 | 1 | 4 | 4 | | | | | | | 1 |
| 15 | | 6 | 5 | | 18 | 2 | | 1 | 8 | 17 | 2 | 7 | | 7 | 1 | 6 | 8 | 1 | 1 | | | | | |
| 16 | | 4 | 4 | | 31 | 1 | | 3 | 1 | 7 | 7 | 320 | | 83 | 1 | 4 | 5 | 12 | | | | | | |
| 17 | | 4 | 1 | | 27 | 5 | | | 4 | 9 | 3 | 230 | | 29 | 3 | | 5 | | | | | | 1 | |
| *Surface Collection:* | | | | | | | | | | | | | | | | | | | | | | | | |
| All | | 25 | 12 | 1 | 21 | 7 | | 2 | 1 | 11 | 5 | 3 | 1 | | | | | | | | | | | |
| *Machine-Scraped Areas:* | | | | | | | | | | | | | | | | | | | | | | | | |
| Area 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| Area 2 | | 1 | 1 | | 1 | | | | | | | | | | | 2 | | 1 | | | | | | |
| ***Mitigation*** | | | | | | | | | | | | | | | | | | | | | | | | |
| *1x.5-m Units:* | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | | 3 | | | 21 | 1 | 2 | | 3 | 6 | 10 | 41 | 52 | 64 | 1 | 1 | 4 | 1 | | 1 | | | | |
| 19 | | 7 | | | 5 | 1 | | | 1 | | 1 | 1 | 4 | | | | | | | | | | | |
| 20 | | 5 | 1 | | 9 | 1 | 1 | | 3 | 2 | | 29 | | | | | 1 | 2 | | | | | | |
| 21 | | 5 | 3 | | 20 | 1 | | | 2 | 3 | 4 | 95 | | | 2 | | | | | | | | | |
| 22 | | 6 | | | 13 | 1 | | | 3 | 6 | 1 | 1 | 12 | | | | 3 | | | | | | | |
| 23 | | 1 | | | 3 | | | | | | 1 | 3 | | | | | | | | | | | | |
| 24 | | 3 | | | 2 | | | | | | 1 | 1 | 1 | | | | | | | | | | | |
| 25 | | 7 | | | 32 | 2 | | | 1 | | 5 | 5 | 14 | 2 | | 3 | 1 | | | | | | | |
| 26 | | 3 | 1 | | 4 | | | | 3 | 3 | 2 | | 1 | | | 4 | | | | | | | | |
| 27 | | | | | 2 | | | | 1 | 2 | 1 | | | | | | | | | | | | | |
| 28 | | 4 | | | 5 | | | | 2 | 4 | 2 | 1 | 3 | | 1 | | | | | | | | | |
| 29 | | | | | 2 | | | | 1 | 1 | | 1 | | 1 | | | | 1 | | | | | | |
| 30 | | | 1 | | 3 | 1 | | | 2 | 1 | | | | | 1 | | 1 | | | | | | | |
| 31 | | 1 | 1 | | 4 | | | | 1 | 4 | | | | | | | | | | | | | | |
| 32 | | 6 | 1 | | 3 | | 2 | | 1 | 1 | 1 | | | | 1 | | 1 | | | | | | | |
| 33 | | | 1 | | 2 | | | | 1 | 3 | | 2 | | 1 | | | | | | | | | | |
| 34 | | 4 | | | 2 | | | | | 1 | | | | | 1 | | | | | | | | | |
| 35 | | 123 | 4 | | 79 | 2 | 1 | 15 | 43 | 92 | 43 | 1 | | 51 | 8 | 27 | 45 | 2 | | 9 | | 1 | 9 | |
| 36 | | 24 | 7 | | 67 | 3 | | 10 | 21 | 67 | 18 | 21 | 1 | 24 | 1 | 10 | 15 | 1 | | 6 | 1 | | 1 | |
| *2x2-m Units:* | | | | | | | | | | | | | | | | | | | | | | | | |
| A SW | | 29 | 3 | | 123 | 12 | 5 | 1 | 5 | 47 | 71 | 47 | 1 | 39 | 12 | 9 | 8 | 2 | | 2 | 1 | | 1 | |
| A SE | | 20 | 1 | 2 | 127 | 10 | | | 12 | 41 | 75 | 407 | | 439 | 18 | 2 | 7 | 1 | 1 | 1 | 2 | | 3 | 1 |
| A NW | | 12 | 2 | | 42 | 1 | | 2 | 7 | 11 | 9 | 84 | 3 | 15 | 4 | 4 | | 3 | | 1 | | | | |
| A NE | | 3 | 1 | | 16 | 2 | | | 2 | 3 | 6 | 220 | | 40 | 2 | 2 | 2 | | | | | | | |
| B SW | | 10 | 2 | 2 | 58 | | | | 8 | 8 | 30 | 194 | | 20 | 4 | 4 | | | | | | | 1 | |
| B SE | | 7 | | 1 | 23 | 2 | 1 | | 6 | 11 | 16 | 50 | | 5 | 2 | 2 | | 1 | | 2 | | | | |
| B NW | | 1 | | 3 | 7 | 1 | | | | 2 | 3 | 125 | | 11 | 1 | 3 | | | | | | | | |
| B NE | | 5 | | | 24 | 1 | | | 2 | 6 | 4 | 120 | | 3 | 2 | 1 | 2 | 2 | 1 | 1 | | | | |
| C SW | | 3 | | | 17 | 2 | | | 4 | 2 | | 20 | | 1 | | | 6 | | | | | | | |
| C NW | | 10 | 3 | | 43 | 1 | | | 3 | 7 | 6 | 60 | | 2 | | 5 | | | 1 | 1 | | | | |
| D SW | | 5 | 1 | | 13 | | | | 2 | 5 | 1 | 11 | | 1 | | | | 1 | | | | | 1 | |

Table C.2 (cont.)

| Unit | SC | R | S | Po | B | T | L | U | W | CN | WN | HB | MB | BM | P | TH | TC | H | MW | MH | T | A | HS | E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D SE | | 3 | | | 10 | 1 | | | 2 | | | 15 | | | | 1 | | 1 | | | | | | |
| D NW | | 1 | | 1 | 17 | 3 | 1 | | 4 | 6 | 2 | 43 | | 2 | 2 | 1 | | 2 | | | | | | |
| D NE | | 6 | | | 32 | 1 | 2 | 2 | 1 | 11 | 14 | 153 | | 278 | 4 | 2 | 1 | 5 | 1 | | | 1 | 1 | |
| E SW | | 9 | 1 | | 29 | | | | 6 | 5 | 1 | 142 | 2 | 2 | 1 | | | | | | | | | 1 |
| E SE | | 6 | 1 | 1 | 17 | 3 | | | 2 | 4 | 3 | 36 | | 3 | | | | 2 | 1 | | | | | |
| E NW | | 8 | 3 | | 19 | 5 | | | 5 | 10 | 16 | 51 | | 1 | 1 | | 5 | 3 | 1 | | 2 | 1 | | |
| E NE | | 14 | | 2 | 37 | | | | 10 | 7 | 13 | 70 | 6 | 1 | | | | 2 | | 2 | | 1 | 1 | |
| G SW | | 2 | | | 13 | | | | 4 | 25 | 2 | 1 | | 2 | 1 | 4 | 3 | 2 | 1 | | | | | |
| G SE | | 20 | 8 | | 37 | 3 | | 11 | 10 | 30 | 10 | 3 | | 4 | 4 | 1 | 9 | 1 | | 4 | | | 1 | |
| G NW | | 8 | 1 | | 22 | 1 | | 5 | 5 | 34 | 9 | | | 4 | 1 | 3 | 9 | 2 | | | | | 4 | |
| G NE | | 9 | 5 | | 28 | 2 | | 10 | 7 | 20 | 3 | 2 | | | 2 | 7 | 5 | | | 2 | | | 1 | |
| H SW | | 16 | 7 | | 35 | | | | 1 | 4 | | 9 | 5 | | | | 4 | 5 | | | | | | |
| H SE | | 7 | 3 | | 30 | | | 2 | 4 | 12 | 4 | 4 | | 7 | 3 | 3 | 3 | | | | | | 1 | |
| H NW | | 11 | 4 | 2 | 18 | 1 | | 8 | 9 | 4 | 1 | 10 | | 2 | 1 | | | | | | | 2 | | |
| H NE | | 28 | 8 | 2 | 38 | 2 | | 5 | 17 | 17 | 2 | 6 | | 11 | 2 | 2 | 4 | 1 | | | | | | |
| I SW | | | | | | | | | | | | 3 | | 4 | | 1 | 6 | 1 | | | | | 1 | |
| I SE | 1 | 1 | 1 | | 10 | | | 1 | 2 | 4 | 3 | | | 3 | | | 4 | | 1 | | | | 1 | |
| I NW | | 4 | | 1 | 12 | | | | 1 | 7 | 1 | 1 | | 3 | | 4 | | | | | | | 1 | |
| I NE | | 2 | 1 | | 19 | | | | 3 | 16 | 2 | 5 | | 1 | | | 5 | | | | | | 1 | |
| J SW | | | 4 | | 5 | | | 1 | 2 | 1 | | 6 | | | 1 | | 3 | | | | 1 | | 1 | |
| J SE | | 3 | 1 | | 4 | | | | 1 | 3 | 3 | 2 | | 1 | | | 8 | 2 | | | | | | |
| J NW | | 1 | 2 | | 5 | 1 | | 1 | 3 | 1 | 1 | | | | | | 2 | 1 | | | | | | |
| J NE | | 1 | | | 6 | | | | 1 | 3 | | 3 | | 2 | 1 | | 4 | | | | | | 1 | |
| K SW | | 3 | 4 | | 31 | | | | 2 | 7 | 2 | 5 | | | | 1 | 4 | | | 1 | | | 1 | |
| K NW | | 9 | 1 | | 22 | | | | 7 | 15 | 1 | 2 | | 2 | | | 5 | 3 | | | 1 | | 1 | |
| K NE | | 16 | 3 | | 60 | | | 6 | 22 | 34 | 10 | 11 | | 1 | 4 | 2 | 32 | | | | | | | |
| L SW | | 3 | 1 | | 5 | | | | | 4 | 2 | 15 | | 4 | | | 3 | 1 | | | | | | |
| L SE | | 4 | | | 30 | | | | | 3 | 7 | 393 | | 8 | | | | 1 | | | | 1 | | |
| L NE | | | 4 | | 3 | | | | | | 7 | 45 | | 5 | 1 | | | | | | | | | |

1 Only units and artifact categories containing remains are included in table; SC=semi-coarse earthenware; R=refined earthenware; S=stoneware; Po=porcelain; B=bottle glass, T=table glass; L=lamp glass; U=unid. glass; W=window glass; CN=cut nails; WN=wire nails; HB=handmade brick; MB=machine-made brick; BM=building material; P=personal items; TH=thin and heavy metal; TC=tin cans; H=houshold; MW=machine and wagon; MH=metal hardware; T=tools; A=ammunition; HS=horse and stable gear; E=electrical; Only datable ceramics and bottle glass were used in the calculation of mean beginning dates.

Table C.3

Artifacts from Excavation Units at 41DN429[1,2]

| Unit | SC | R | S | Po | B | T | L | U | W | CN | WN | HB | MB | BM | P | TH[3] | TC | H | MW | MH | T | A | HS | E |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Testing*** | | | | | | | | | | | | | | | | | | | | | | | | |
| *1x.5-m Units:* | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | | | 2 | | 44 | | 1 | | | 1 | | | | | 1 | | | | | | | | | |
| 2 | | 5 | 1 | | 6 | | | | 4 | 9 | | | | 5 | | 11 | | | 1 | | | | | |
| 3 | | 1 | | | 8 | 1 | 1 | | 19 | 8 | | | | 1 | | | | 1 | | | | | | |
| 4 | | 1 | | | 4 | 1 | 6 | | 13 | 23 | | | | 35 | 5 | 19 | | | | | | | 1 | |
| 5 | | 2 | 1 | | 77 | 13 | | | 70 | 12 | | | | 8884 | 5 | 17 | | | 1 | | | | | |
| 6 | | 2 | 3 | 2 | | | 1 | | 3 | | | | | 2 | | 74 | | | | | | | 1 | |
| 7 | | | | | 3 | | | | 1 | | | | | | 1 | 3 | | 1 | | | | | | |
| 8 | | | 3 | | 115 | | | | | 2 | | | | 5 | | 44 | | | | | | | | |
| 9 | | | | | 9 | | | | 2 | | | | | 1 | 1 | 6 | | | | | | | | |
| 10 | | | | | | | | | | | | | | 1 | | | | | | | | 1 | | |
| 11 | | 1 | 1 | | 9 | 4 | 1 | | 1 | 1 | 1 | 5 | 1 | 2 | | 9 | | | | | | 1 | | |
| 12 | | 1 | | | 5 | 1 | | | 1 | 4 | 3 | | | 1 | | 2 | | | | | | | | |
| 13 | | 2 | | | 6 | | | | | | 1 | 1 | | | | | | | | | | | | |
| 14 | | 57 | 10 | 3 | 153 | 19 | 22 | | 49 | 33 | 75 | 1 | 8 | 40 | 36 | 279 | | 15 | 2 | | 1 | 1 | 1 | |
| 15 | 1 | 40 | 15 | 5 | 185 | | 21 | | 38 | 20 | 75 | 20 | 7 | 21 | 22 | 181 | 14 | 13 | | | 3 | 2 | | 4 |
| 16* | 1 | 46 | 15 | 3 | 259 | 21 | 36 | | 39 | 25 | 125 | 1 | 8 | 35 | 21 | 260 | | 15 | 11 | | 2 | 4 | 3 | 4 |
| 17* | 1 | 86 | 8 | 4 | 155 | 22 | 24 | | 47 | 50 | 100 | | 8 | 57 | 15 | 326 | | 10 | 14 | | 4 | 1 | | 1 |
| 18 | | 103 | 16 | | 144 | 30 | 19 | | 37 | 35 | 123 | 16 | 7 | 43 | 10 | 337 | | 8 | 4 | | | | 1 | |
| 19 | | 28 | 13 | | 100 | 22 | 4 | | 22 | 9 | 22 | 8 | 5 | 18 | 3 | 292 | | 2 | 6 | | | | | |
| 20 | | 58 | 58 | 1 | 214 | 12 | 31 | | 53 | 28 | 62 | 19 | 18 | 34 | 22 | 233 | | 7 | 4 | | 2 | 1 | 1 | 1 |
| 21 | | 14 | 14 | | 41 | 7 | 26 | | 16 | 4 | 7 | 24 | 1 | 4 | 9 | 28 | | | 1 | | 1 | 1 | 1 | |
| 22 | | 5 | 5 | 1 | 22 | 1 | 31 | | 222 | 2 | 6 | 12 | 1 | 4 | 8 | | | | | | 1 | | | |
| 23* | | 11 | 11 | | 22 | 2 | 8 | | 63 | 4 | | | | 5 | 7 | 1 | | 1 | | | | | | |
| ***Mitigation*** | | | | | | | | | | | | | | | | | | | | | | | | |
| *1x.5-m Units:* | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | | | | | 6 | | | | | 13 | 7 | | | | | | | | | | | | | |
| 25 | | | | | 40 | | 2 | | 60 | 39 | 42 | | | 108 | 38 | 81 | | | 3 | 1 | | | | |
| 26 | | 1 | 2 | | 33 | 2 | 5 | | 116 | 3 | 43 | 9 | | 27 | | 29 | 40 | 1 | | 1 | | | | |
| 27 | | 7 | | | 3 | 2 | | | 2 | | 1 | | | 2 | 1 | | | 5 | | | | | | |
| 28 | | 4 | | | 56 | 1 | 1 | | 2 | 2 | 9 | | | | | 31 | 1 | 4 | | | | | | |
| 29 | | 1 | 2 | | 40 | 4 | | | 5 | 2 | 5 | 3 | | 7 | 3 | 2 | | | | | | | | 1 |
| 30 | | 1 | | | 22 | 13 | | | 20 | 2 | 14 | | | | 3 | 4 | | 1 | | | | 1 | | 2 |
| 31 | | 2 | | | 42 | 2 | 3 | | 8 | 5 | 9 | | | 6 | 11 | 11 | 7 | | | | | | 1 | |
| 32 | | | | | 13 | 4 | 1 | | 54 | 12 | 55 | 2 | | 2 | 9 | 14 | 2 | 1 | | | | | 1 | |
| 33 | | | | | | 3 | 3 | | 3 | 5 | 5 | 12 | | 6 | | | 2 | | | | | | | |
| 34 | | 6 | | | 31 | 3 | 1 | | 4 | 8 | 41 | | | 9 | 3 | 3 | 7 | | | | | 1 | | |
| 35 | | 6 | 1 | | 16 | | 1 | 1 | 2 | | 5 | | | 2 | | 1 | 2 | | | | | 1 | | |
| 36 | | | | | 26 | 2 | 1 | | 8 | 11 | 10 | 1 | | | 3 | | | | | | | | | |
| 37 | | 9 | | | 43 | 1 | 1 | | 7 | 2 | 5 | | | 2 | 2 | 15 | | 1 | | | | | | |
| 38 | | 5 | | | 9 | 1 | 1 | 1 | 12 | 3 | 1 | 2 | | 2 | 1 | | 1 | 3 | | | | | | |
| 39 | | | 1 | | 4 | 1 | | | | | 1 | | | | | | 1 | | | | | | | |
| 40 | | | 1 | | 18 | 3 | | | 27 | | 14 | | | 5 | 1 | 70 | | 1 | | 1 | | 1 | | 1 |
| 41 | | 2 | | | 142 | 2 | 21 | | 162 | 8 | 28 | 4 | | 2 | 4 | | | | | | | | 1 | |
| 42 | | | | | 3 | | | | | 1 | | | | 1 | 1 | | 29 | | | | | | | |
| 43 | | 1 | 2 | 2 | 9 | | 3 | | 22 | | 1 | 1 | | 3 | | | | | 1 | | | | | |
| 44 | 1 | 16 | | | 40 | 3 | 3 | | 213 | 1 | 1 | 55 | | 1 | | 8 | | 1 | 1 | 1 | | | | |
| 45 | | 9 | 4 | | 34 | | 6 | | 42 | 10 | 2 | 6 | | 1 | | | | 2 | | 1 | | | | |
| 46 | | 2 | | | 6 | 1 | 2 | | 5 | 8 | 3 | | | 2 | 4 | | | 1 | | | | | | |
| 47 | | | | | 106 | 7 | 10 | 1 | 74 | 9 | 31 | | | 4 | 9 | 12 | 30 | 5 | | | 1 | 4 | | |
| 48 | | 16 | 2 | | 40 | 1 | | | 33 | | 5 | 3 | | 1 | 3 | | 7 | 5 | | | | | | |
| 50 | | 26 | 8 | 1 | 157 | 10 | 2 | | 63 | 44 | 140 | | | 38 | 4 | 34 | | 1 | 4 | 3 | | 3 | 1 | 4 |
| 51 | | 40 | 8 | 10 | 233 | 8 | 6 | 2 | 530 | 21 | 440 | 8 | | 56 | 40 | 148 | 151 | 5 | 18 | 15 | 10 | 4 | 7 | 41 |
| 52 | | 15 | 5 | 10 | 181 | 3 | 4 | | 388 | 47 | 306 | 5 | | 30 | 17 | 23 | | 2 | 4 | 5 | | 4 | 2 | |
| 53 | | 16 | 21 | | 133 | 10 | | 1 | 109 | 27 | 167 | 1 | | 25 | 7 | | | 8 | 2 | 2 | 2 | 7 | | |
| 54 | | 3 | 4 | 1 | 38 | 5 | 20 | | 141 | 24 | 20 | 17 | | 25 | 7 | | | 1 | | | 3 | | 5 | |
| 55 | | 14 | 8 | | 59 | 2 | 21 | | 188 | 55 | 69 | 344 | | 125 | 24 | 48 | 30 | 10 | 4 | 1 | | 1 | 2 | 2 |

1 Only units and artifact categories containing remains are included in table; SC=semi-coarse earthenware; R=refined earthenware; S=stoneware; Po=porcelain; B=bottle glass, T=table glass; L=lamp glass; U=unid. glass; W=window glass; CN=cut nails; WN=wire nails; HB=handmade brick; MB=machine-made brick; BM=building material; P=personal items; TH=thin and heavy metal; TC=tin cans; H=houshold; MW=machine and wagon; MH=metal hardware; T=tools; A=ammunition; HS=horse and stable gear; E=electrical.

2 Only datable ceramics and bottle glass were used in the calculation of mean beginning dates.

3 For testing units only, TH=thin and heavy metal and tin cans, and MW=machine, wagon, and metal hardware.